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ARMS TRANSFER : AN INSTRUMENT OF FOREIGN POLICY

by

COLONEL R. RAMA RAO (RETD.)

PART I *

MILITARY assistance is a many-sided phenomenon. It covers extensive areas and is designed to secure a wide variety of policy objectives. In the post World War II era, military assistance policies and programmes of Great Powers have been major elements in the diplomacy of alliances and blocs. Testifying before the House Committee on Foreign Affairs on June 26, 1968[1] the then U.S. Defence Secretary, Clark Clifford observed:

> The Foreign Military Sales Act will retain all the present controls. In addition, it will establish further restraints designed specifically to insure that the military sales programmes will continue to be fully and responsively a sound instrument of foreign policy.

This was further elucidated by Assistant Defence Secretary for International Affairs, Paul Warnke, who on the same occasion testified as under[2] :

Senator Bloomfield: "What happens when there is a conflict such as occurred a few weeks ago, in which it allegedly appeared that Jordan was attacking Israel? Does this prompt you to change your view of the programme or is it business as usual?"

Warnke: "I would say, Sir, that it is business as usual; but our business is to use the military sales and military grant programmes to implement the foreign policy of the United States.

We are not in the business of selling arms or providing arms just for the sake of providing arms."

Later Warnke amplified this by stating that the State Department as the Executive Authority to implement United States foreign policies, and the defence Department consult each other and agree on programmes, which would be continually reviewed to meet changing situations.

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*Part I of this article was presented by the author at a Seminar held at New Delhi in November 1970, In Part II, the subject has been brought up to date discussing in further detail the military and political implications of arms transfers from Great to the smaller Powers. (Ed)

[1]Hearing before the Committee on Foreign Affairs, House of Representatives Nineteenth Congress Second Session Proceedings No. HR. 15681, June 26-27, 1968 p. 7.

[2]Ibid. p. 49

On a previous occasion[3], Assistant Secretary of Defence Paul Nitze had described the interaction between U.S. arms sales and foreign policy in these terms:

> Our entire arms policy is in fact an accurate reflection of considered agreement at the highest levels of authority.

This emphasises the fact that no arms transaction—sale, lease or gift—is decided upon, except in the context of the donor country's foreign policy objectives and goals.

Although in the pre-World War I era, military assistance from one country to another was almost entirely a commercial transaction, this changed substantially during World War II when the United States initiated massive military supply programmes under lend-lease agreements. After the War, with Britain's withdrawal from her imperial outposts and her inability to support operations abroad, Britain persuaded United States to take over her military aid commitments in Greece and Turkey. This was the beginning of military aid programmes as we know it today. About the same time cold war or "no war no peace" became a recognisable feature of international relations. These developments convinced the United States of the need to build up the military strength of likeminded countries in Europe which could resist communist expansion. Thus originated NATO which concept was extended to West Asia in the form of CENTO and to South East Asia in the form of SEATO. These global commitments imposed on the United States as the richest, industrially most advanced and militarily the strongest power, the responsibility for aiding and assisting her treaty partners and other friendly countries in varying degrees, with military and economic assistance.

Thus the origin of military assistance as now understood and practised could be traced to the needs of U.S. foreign policy. Military assistance includes outright gifts of military hardware; sale of select items of weapons systems and military equipment at concessional rates; supplies on a no-profit no-loss basis, or at market rates as may be considered appropriate by aid givers for the particular occasion. Further, the sales could be on a strictly cash or on a deferred payment arrangement. Military assistance also includes lending or leasing of equipment—'lease' on a no-rental or very nominal rental basis as in the case of U.S. 'leased' submarine 'Ghazi' to Pakistan or at near market rates as in the case of the leasing of a squadron of 24 F-4 fighter bombers to Australia recently. Yet other categories of aid are the training of military personnel of aid receiving countries in the donor country—a variant of this is for the donor country to establish training centres in the recipient country. Other aspects are the building of military administrative infrastructures such as air fields and roads, port and ware housing facilities, repair installations and above all communication facilities including air defence ground environmental facilities. More sophisticated forms of aid-reserved generally for countries in the middle level or those who have the

3. 1967 Congressional Hearings, quoted in *The Arms Trade in International Relations*, Lewis A. Frank, 1969 p. 157.

ability to negotiate with donors otherwise than as dependants would include technological assistance to develop their own arms industries. This could be by the sale of designs, process details and other manufacturing data as well as supply of machinery and plant for the manufacture of particular items of equipment—as also in some cases of certain essential semi-finished material and sub-assemblies.

Military aid in this comprehensive sense is practised and is affordable only by the super powers. In the case of the lesser powers, who are highly industrialised and traditionally had thriving arms industries of their own, arms aid, except perhaps marginally, would mean arms sales. Even so there would be political overtones to arms transactions undertaken by these middle powers. Britain, France and West Germany are examples of this class of powers. Traditionally neutral powers e.g. Sweden and Switzerland have the competence to build sophisticated military equipment and supply such equipment to other countries. In their case the transactions are more or less on a purely commercial basis. In general, their policy has been to withhold supplies of arms to countries involved in hostilities.

THE COMMERCIAL MOTIVE

The medium powers and a few smaller powers traditionally engaged in the manufacture and sale of arms foster their arms industries for several reasons. Great Britain and France have had sizable armed forces of their own and built up their arms industries to sustain their armed forces. After decolonisation, their former colonies depend on them in varying degrees for arms and other equipment. The metropolitan powers' arms industries served to equip colonial and under developed countries' armed forces and so earn profits. Equally important it provided in many cases a ready outlet for the producer's obsolescent equipment—thus enabling the producing country to change over to a new generation of equipment without incurring undue penalties. This aspect of the matter is of considerable significance since armaments industries represent the highest level of technology attained in a country's industry. In fact, to a great extent the level of technology attained and the industrial competence of a country could be judged by the equality of the arms produced by it and the indigenous content of the design development and production effort that have gone into those arms. Also as new materials, processes and techniques are devised, earlier weapon systems tend to become obsolete. The rate of obsolescence—it may be noted—is determined not by the slowest in the arms race, but by the fastest, most resourceful and innovative powers in the world. Others have to keep up not merely in producing new weapons in quantity but in acquiring the ability to change over to improved types of weapons, and discard current ones—which may yet have considerable 'life'. This is expensive business not merely because of the value of one's inventory at the time at which obsolescent items have to be cleared, but because the cost of development of new weapons is increasing rapidly. On average, every new weapon may cost three to five times the

price of the one that it is designed to replace.

For example*4 F-86, the Korean War Sabre jet, costs about $298,000 a piece. Its successor, the F-104 built in the mid-fifties costs about $1.1 to 1.2 million, while the F-111A of the late sixties has been priced at $ 6.8 million (subsequently costed @ $ 11 mn. a piece).

Thus the increasing costs of research and development of new weapon system coupled with the increasing frequency with which these are inducted into service compels all weapon producers—affluent as well as the middle level powers—to find an outlet for their 'obsolete' and 'obsolescent' arms. The terms 'obsolete and 'obsolescent' are purely relative terms. Weapon systems obsolete in the country of origin may be found in service, long after they are discarded by armed forces of producer powers, in 'client' states or less developed states.

The 'gap' in the requirements of arms between the bigger powers and less developed countries in a way assists the transfer of arms from one category to the other and permits the momentum of arms sales to be maintained. Also it enables the supplying country, largely, to determine the type of arms to be released to a particular country and so control the postures that the latter country could adopt towards others.

The super powers' arms transactions with industrialised nations are regulated by the status of the latter within alliance systems. For example, the U.S. has for historical and other reasons, very close and cordial relations with Britain to whom she even transfers nuclear know-how. In fact it was this 'special' Anglo-American relationship that gave rise to French misgivings and France's development of an independent deterrent and its dissociation with NATO nuclear planning. West Germany and Japan were completely disarmed at the end of World War. Their industries were in ruins and their most urgent task was reconstruction. They needed peace. Hence for them American protection and economic assistance were valuable. They utilised both to good purpose. In the light of cold war postures, they have been able to acquire under licence, the technologies of aircraft and related industries. Given the time and effort, these countries could have developed the technologies on their own. Their assessments have been that it would be economical to acquire by purchase from abroad certain technologies—rather than develop them *ab initio*. However, having imported a technology, they have been careful to assimilate it and develop further on their own. This approach is true of these countries not only in respect of aircraft industry but in nuclear and other areas as well. Thus Japan has been building under licence from America the mach 2 class fighter F-104J and associated weaponry. It has negotiated for licensed manufacture of the versatile F-4 and is building on its own, several light weight planes for civil and military use. Germany likewise has built its version of F-104 under licence, is collaborating with Britain and Italy on the MRCA

*4. Weapon System Escalation of Costs, *Executive Aviation Report* No. 1958 dated 25 September 1970. p. 3.

project and building on its own an all purpose VTOL aircraft. She has deveoped the Leopard tank which most European and other countries would buy. She has revived her submarine industry within treaty limitations. The pattern here is one of seeking to develop weapons by one or more dominant countries of a group or region who could exploit the potentialities of a fairly lucrative market bound by treaties and alliances. France and Britain seek to act within this system as well as outside especially in the large and growing third world area. In this group each country constitutes by itself a relatively small market but cumulatively it is a market of considerable significance both by reason of its direct arms sale potential as well as by the indirect help that arms transactions can provide in negotiating other lucrative deals such as oil, uranium, iron ore etc.

The pattern in the Communist bloc is in some respects similar to that obtaining in NATO. Because of the considerable disparity between the size and strength of the leader of the Group, the Soviet Union, and the other members of Warsaw Pact, the Soviet Union is the weapon producing country of consequence. Among the smaller countries of the pact only Czechoslovakia had some armament industries of her own. In the post-war period armament industries have been developed with Soviet assistance in other East European countries too. Since Soviet Union has to keep in step with the United States, her armaments would necessarily have to be as effective as U.S.'s and would need to be changed over roughly with the same frequency. Thus the Soviet Union is faced with the problem of disposal of weapon and equipment systems shed or about to be shed by her forces. Since the entire world is not under U.S. hegemony, states which feel threatened by their neighbours (some of whom might be U.S. clients or associated with and as such armed by U.S.) would find the Soviet Union a useful source of arms supply. India when faced with Pakistani aggression and was denied arms supplies by U.S. and Britain; Egypt when faced with British-French-Israeli aggression and likewise denied U.S. assistance, had to turn to Russia for essential defence supplies. Earlier, to Communist China, Russia was the sole support and benefactor.

THE 'WORTH' OF THE ARMS MARKET

The total turn-over in the world's arms market is worth several billions dollars. During the period 1950-1969, according to Pentagon records, about $ 34.8 billion worth of arms and ammunitions have been shipped to American allies as 'military assistance'. This includes some arms supplied to South Vietnam forces. Among the weapons supplied were listed[5].

F-84 Fighters	.. ..	4385
F-86 Fighters	.. ..	2812
F-100 Fighters	.. ..	349
F-104 Fighters	.. ..	389

5. *U.S. News and World Report*, 22 July 1970.

Cargo Planes	835
Trainer Aircraft	3194
Helicopters	705
Other Aircraft	4163
Trucks	350000
Tanks	20017
Personnel Carriers	2512
Other Armoured Vehicles ..	3200
Destroyers	36
Submarines	24
Landing Craft	1381
Other ships	820
Rifles and Carbines	3438000
Machine Guns	152411
Mortars	29000
Cannon and large Guns ..	23000
Nike and Hawk Missles ..	4400
Other Missiles	23000

The United States also sold arms worth $ 12.1 billion during the same period.

During the 1950's U.S.A. was giving away $ 2 billion worth of arms every year, of which roughly 20 per cent were for cash sales. In 1970-71 the total authorised transfer is for $ 2 billion of which only 400 million would represent military assistance authorisation, the balance being sales.

During the past six years, total military spending by the world has been about $ 1,000 billion[6] according to one estimate. According to this estimate, U.S.A. during the decade 1950-59 gave away $ 34 billion worth of arms and sold another $ 13 billion worth. In 1955, the world's annual arms trade was $ 2.5 billion. Now it is assessed at $ 5 billion a year. In the next decade it is expected to grow to $ 10 billion a year. The United States is the world's chief arms merchant with sales and grants amounting to $ 2 billion a year. Russia comes next with sales/gifts valued at $ 1 billion. Britain and France together account for $ 1 billion a year in arms sales. These two countries treat their arms industries as excellent export earners. In fact French aircraft and armament sales abroad account for about 8 per cent of its total export trade. In the case of Britain it is probably of a similar order.

Emphasis Shifting From Gifts to Sales

The emphasis has now shifted to sales, arms gifts being restricted to the very needy and countries whose military posture is of vital concern to the donor power. The trend is discernable from the following[7].

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6. *Far Eastern Economic Review*, 5 March 1970.
7. *U.S. News and World Report*, 22 July 1970.

(in million dollars)

	1969-70	1970-71
U.S. Arms sales	1,300 (actual)	1,600 (expected)
U.S. Arms gifts	400 (actual)	400 (expected)

U.S. Arms gifts are now limited to South Korea, Turkey, Greece, Ethiopia, Nationalist China, Philippines and Indonesia. South Vietnam gets its requirements from U.S. Defence Department.

Among the countries who bought arms or who received arms as gifts from America were

Period 1950-69
who bought arms from U.S.A.

West Germany	$ 2913 million
U.K.	$ 988 "
Canada	$ 747 "
Australia	$ 553 "
Italy	$ 325 "
France	$ 300 "
Iran	$ 257 "
Japan	$ 178 "
	$ 6261 "

Period 1950-69
who got gifts of arms from US

South Vietnam	$ 6000 million
France	$ 4153 "
South Korea	$ 2714 "
Turkey	$ 2673 "
Nationalist China	$ 2490 "
Italy	$ 2289 "
Greece	$ 1456 "
Belgium	$ 1237 "
Netherlands	$ 1217 "
U.K.	$ 1035 "
	$ 25464 "

This still leaves unaccounted about $ 6 billion worth of sales and $ 9·4 billion worth of arms gifts which must have gone to special areas e.g. Pakistan, Latin America and perhaps a few other countries.

Explaining the 'sales/grant' mix in military assistance programmes, Defence Secretary Robert McNamara told the Senate Foreign Affairs Committee in April 1967[8].

> In the 1950s, the grant programme far exceeded the sales programme. At the present time (1967), the ratio is 3 to 2 in favour of sales. But since 1961, the total of the two programmes has been remarkably stable, hovering around $ 3 billion per year.

McNamara considered that this shift in the sales-grant mix was due to the strengthened economic position of the major US-allied recipient countries, which allowed placing more of arms supplies on a sales basis, as also to the political climate of Congress in recent years being more favourable to sales than to aid.

RUSSIAN ARMS SUPPLIES

As far as is known, Russia appears to be supplying arms to her allies and other third countries purely as sales, the exception probably being part of the replacement of arms of U.A.R. after 1967. However, when a section of Arab opinion demanded 'offensive' arms from Russia for undertaking limited offensive operations on the East Bank of the Suez, certain reports early this year indicated that Soviet Union, in a move to discourage such adventurism, demanded repayment for the arms already supplied. It is thus possible that Soviet Union in keeping with her policy has only 'sold' arms to U.S.R. possibly on 'liberal credit terms, as she did to Indonesia in the fifties and early sixties. The Soviet Union is collecting its dues from Indonesia over a thirty year period according to an agreement arrived at recently.

Nature of Control Exercised by Arms Suppliers

Arms suppliers exercise control over recipients in a variety of ways as already indicated. A few aspects may be specifically mentioned:

1. Quantum of Supplies

   By determining the quantum of supplies of arms and equipment to a country, the donor (or seller) would very largely *determine the size of recipient country's armed forces.* This would be in accordance with the role allotted to the recipient country in global or regional affairs by the donor country.

2. Nature of Supplies

   By determining the nature of supplies to be sold or given to a country the donor would automatically *determine the effectiveness of the forces of the recipient country.*

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8. *Arms Trade in International Relations*, Lewis A. Frank, 1969, p. 158.

3. RATE OF FLOW OF SUPPLIES

By determining the rate of flow of supplies, the donor would in effect prescribe the rate of build up of the recipients armed forces. This could be accelerated or retarded in accordance with any priorities that the donor may have in mind.

4. PRESCRIBING SCALES OF REPLENISHMENTS AND SPARES

This would determine operability of imported equipment of recipient country and would be a determining factor governing the battle worthiness of recipient's forces.

5. LOGISTIC SUPPORT

By determining the extent of logistic support that a recipient gets or is allowed to set up in the recipient country itself, the operational effectiveness of imported equipment is closely controlled. This logistic support would include provision of spares for immediate maintenance/replacement, repairs and overhaul of equipment as needed by the technology involved in particular items of equipment and facilities for moving equipment from units to logistic maintenance areas. It would also include all elements of the infrastructure needed to keep equipment systems and the forces utilising the equipment at optimum levels of efficiency.

6. TRAINING FACILITIES

Donor country as innovator of equipment would have evolved appropriate tactical doctrines for the employment of particular items of equipment as well as overall battle philosophies. Training doctrines and material could be considered as 'soft ware' in relation to equipment hardware. Denial of the former can render the latter infructuous. On the positive side, by training officers and other ranks of recipient countries, the donor would in effect convert a section of the recipient country's elite to its views on international military and political affairs. Thus it could in time build up a lobby in the recipient country for furthering the cause of the donor country.

It has been stated that more foreign trainees go to United States under the military training programme than any other programme and at one time as many as 15,000 foreigners were being trained in U.S. military establishments.

7. TERMS OF PAYMENT

By determining the terms of payment-this is especially so of America and to a lesser extent of Russia—the donor country would effectively set limits on the types and quantities of equipment that a recipient could procure from other sources. The process of build up of armed forces of a recipient country can be accelerated by easing terms of

payment e.g. by supplying at 'cut' rates and allowing grants or decelerated by stiffening the terms by switching over from gifts or cut rates to normal rates.

8. SPECIAL MEASURES

Certain special measures are effective—especially in the short or medium run—in regulating the armed strength of recipient countries. These are withholding particular sub-systems in major weapon systems to be supplied or already supplied such as electronic items or sighting and aiming systems of aircraft. Where licensed manufacture is involved, the denial or delaying of key sub assemblies or certain semi-processed items could freeze production in the recipient country. The Ambajhari Ordnance Factory in India was delayed by two to three years by U.S. initially undertaking to provide technical assistance and supply of plant and equipment and subsequently stopping the assistance. Similarly the high explosive and propellant plants projects which were dropped in the hope of obtaining supplies of the products from USA, could only be revived after a lapse of a few years.

Thus arms aid and arms sales constitute an important element in the foreign policy of supplier states. They are also effective levers in regulating the postures of countries dependant on supplies for arms. Stated bluntly infusion of arms into an area can create tension which later could either be escalated or defused as suits the supplier power. This control by supplier states is total and wholly effective when the recipient is entirely dependant on the supplier. Less so when the recipient is either self reliant or has access to alternative sources of supply.

Conflicts in East and West Asia and Latin America in the postwar period illustrate the extent to which arms aid and sales have been used by world powers in furtherance of their interests as they visualised them.

It is true that in a number of cases the calculations of donor countries have been proved wrong or that recipient countries have utilised arms not in furtherance of donors' objectives.

Yet arms aid remains an important instrument of foreign policy of the major powers of the world.

PART II

FOREIGN POLICY OBJECTIVES UNDERLYING ARMS SUPPLIES

These have been elaborated in the earlier analysis. Events in West, South and South East Asia during the past five years have amply confirmed the correctness of this analysis. Over the years a few other aspects of arms

supplies by Great Powers to small countries in sensitive regions, have also come into prominence. An examination of these aspects would assist the student of current affairs in more clearly discerning the objectives of great powers in releasing or withholding supplies of weapons and associated equipment to one or other country in a troubled region.

First, selective arms supplies are a means of creating and sustaining proxies through whom the arms suppliers policies in a region could be given effect to. The 1973 Paris Peace Agreement was designed to enable U.S.A. to effect a clean disengagement from Vietnam, leaving hopefully, South Vietnam in a position where it could hold its own in the face of any direct or indirect thrust that North Vietnam and the Viet Cong may develop against Saigon. However, in order to enable President Thieu's regime to stay secure—and if possible to roll back Viet Cong and the PRG—U.S.A. heavily armed South Vietnam's armed forces and it looked for a time as if President Thieu's regime with its well equipped armed forces might succeed in establishing their sway over the greater part of South Vietnam and acquire the stamina to hold on, thus providing an outpost for U.S.A. in the region. Clearly South Vietnam's intended role was to provide a useful foothold for U.S.A. in South East Asia and to act as proxy for its arms supplier and aid giver in containing Hanoi.

That, in the event, President Thieu's forces were not able to hold their own and thus failed to fulfil their role was due to the alienation of President Thieu's regime from the people. Strategical errors such as failing to associate moderates and neutrals with the administration primarily accounted for the fall of the regime while President Thieu's tactical blunders in ordering a premature and precipitate withdrawal of troops from the former imperial capital Hue and the abandonment of fortified positions in the Central Highlands, hastened the collapse of his regime.

In the strategically and economically significant region of West Asia, Israel continues to be regarded as a useful proxy for the United States. By enabling Israel to retain a definite edge in weaponry over its rivals, Israel's self confidence would be sustained and its security assured. And a militarily formidable Israel would be a viable surrogate for U.S.A. in West Asia and would be recognised as such by Israel's Arab adversaries as well as by Russia.

Till October 1973, U.S.A.'s commitment to Israel appeared open ended, judging by U.S.A.'s reluctance to call Israel to order for its failure to vacate Arab territory occupied in June, 1967. The Yom Kippur War and the resulting oil sanctions and price escalations enforced by Arab oil producers brought home to American policy planners the risks involved in adopting a policy of open ended support to Israel in the latter's disputes with its Arab neighbours. Yet, because Israel's utility as an effective proxy for U.S.A. in West Asia remains, Israel continues to enjoy American military, economic and diplomatic support in sufficient measure to compel President Sadat to seek U.S.A.'s good offices to help resolve the Arab-Israeli dispute over the vacation of occupied territory.

In the sub-continent, Pakistan, ever since the conclusion of the Mutual Assistance Pact between that country and U.S.A., in the mid Fifties, has had a special role in American thinking. President Eisenhower did not envisage Pakistan utilising American military assistance in order to secure by force, compliance of its demands on this country. Secretary of State Dulles also perhaps did not envisage that the only target for Pakistan's arms would be India. However, he did believe that generous arms supplies to Pakistan would keep a conservative regime in power in Pakistan, would ensure political stability in that country[9*] and above all, would prevent Russian penetration into Pakistan. It is also possible that Secretary Dulles genuinely believed—as did British policy makers of the Thirties and Forties—that Pakistan would be a useful tool for indirectly influencing events in conservative West Asian and Gulf countries.

If as a result of building up its military muscle, Pakistan uses or threatens to use force to compel India to cede territory or comply with Pakistan's other demands, the prospect did not unduly worry either Mr. Dulles and other American statesmen.

The events of the past two decades—and more especially of the last few years—show that the threat to India's security and to peace in the sub-continent is directly proportional to the quantum of external arms assistance that Pakistan receives. American and Chinese policy makers have not been slow to recognise this fact of life in the sub-continent. Further, providing arms to Pakistan (free of charge, or at nominal rates) is from the donor's point of view, a risk free and comparatively inexpensive form of pressurising India by posing threats to India's security. In a sense, Pakistan's role as America's proxy in South Asia is similar to that of Israel in West Asia. Pakistan however has the additional benefit of support from China and possibly some West Asian States, adding correspondingly greater dimensions to India's security problems.

Arms supplies by Great Powers to Gulf and West Asian countries also illustrate how closely connected are the arms supply and foreign policies of great powers.

The credit balances of Iran and Arab oil producers which were rising steadily since the turn of the decade, shot up spectacularly since late 1973 with the four fold increase in oil prices then enforced by OPEC. This abrupt change in the price structure of oil rocked the economies of industrialised nations as well as of third world countries lacking oil resources.

As a very convenient way of mopping up at least a part of the cash surpluses of West Asian oil producers, U.S.A. followed by France and Britain, initiated a drive for arms sales in the region. The objectives of Britain and France in this were essentially to improve their balance of payments

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1*American analysts had visualised as early as the mid fifties that the secession of the Bangla Desh (the Eastern Wing of Pakistan as it then was) was only a question of time; but a conservative regime would, in American thinking more eassily succeed in keeping Pakistan intact than a 'populist' regime.

position, to keep their armament industries going and to improve their diplomatic leverage over oil producers.

To the United States, however, massive arms sales to West Asian countries besides being a means of reclaiming petrodollars, serves important political purposes.

In the two years ending 30th June 1974, Iran bought at least $ 5800 mn. worth of F-14 (Tom cat) fighter bombers, Tow antitank missiles and other sophisticated weaponry from U.S.A., according to a report of U.S. General Accounting office, released to the Press in January '75. The U.S.A. also loaned the services of 610 American military advisers and weapon specialists to train Iranian military personnel. Since then, Iran is believed to have placed orders for American military equipment worth $ 3 Bn. This is besides the equipment—chieftain tanks, ground to air missiles and communication equipment worth approximately $ 1 Bn. purchased or to be purchased from Britain.

From Saudi Arabia and Kuwait, U.S.A. has secured orders for the supply of aircraft, APCs, missiles and communication equipment worth $ 1.5 Bn. and $ .8 Bn respectively. Qatar, Abu Dhabi and UAE have also been purchasing arms from Europe and U.S.A., in significant quantities.

According to West Asian observers, arms purchases by these states—especially Iran, was nothing to do with the Arab-Israeli issue—a point not without force considering the readiness—ind ed the eagerness—with which U.S.A. agreed to release its most recent air craft and ship systems with all their weaponry, fire control and electronic counter measures equipment to Iran. Indeed, Iran while demanding that Israel vacate occupied Arab lands has declared that it will not "mix oil with politics"—indicating that in the event of hostilities breaking out, Iran would not discontinue oil supplies either to the West or even to Israel. According to Arab opinion, the efforts of oil rich Arab states to acquire billions of dollars worth of arms, does not, in fact, improve the military posture of Arab States vis-a-vis Israel. This has been expresed as candidly as is diplomatically possible, by Hassanein Heykal. In an interview with a Beirut Weekly (Al Ousbon al-Arabi) published on January 27, 1975, he is reported as saying:—

".....The Arab World is buying great quantities of weapons and where is this weaponry? If we look at the Arab States, without mentioning names, we can see that they have spent no less than 8 to 10 billion dollars on arms and "defence systems" over the past year, and perhaps more. And where is this weaponry? Where is it along the line of confrontation? And whom is it serving? And who is the enemy?"

Heykal's lament clearly is that the massive arms inducted into Saudi Arabia, Gulf Arab States and Iran have served to mop up oil dollars and far from strengthening Arabs in their confrontation against Israel would only serve to promote dissensions within the Arab camp and also possibly between Iran and one or other of her Arab neighbours.

There is another aspect of arms infusion into West Asia which has ominous possibilities. At the height of the oil crisis in the fall of 1973, American statesmen cautioned West Asian oil producers of the possibility of American intervention in the area to seize some at least of their oil fields if they attempt to "strangulate" the economies of Western oil importers. In order to lend credibility to these threats, American warships cruised in the Arabian Sea and inspired leaks of American troops practising desert warfare, appeared in the world press. These threats were not without effect since some at least of the oil producers started supplying oil discretely to U.S.A. and Western Europe despite the official embargo imposed by OAPEC. America too softened its stand, since West European countries who were hurt by the oil embargo were unprepared to extend whole-hearted support either to America's projected tough stand vis-a-vis the Arab countries or to its apparently open ended commitment to Israel. In fact West Europe was by no means happy at the use of NATO facilities by U.S.A. for air lifting urgently needed munitions to Israel in October 1973.

Threats of military intervention in West Asian oil producing countries have been repeated more recently in unambigous terms by American Statesmen[10]*. It may be argued that there is inconsistency in American policy in that while supplying arms to West Asian oil producers on a massive scale, U.S.A. talks at the same time of intervening by force should oil producers hurt the vital interests of American (or of its allies). There is in fact no inconsistency in America's West Policy. The real objectives of inducting massive arms supplies into the region are threefold. Firstly to mop up petro-dollars; secondly to keep out Russian arms and thereby prevent Russia from entering or extending its influence in this critical area. Thirdly to ensure that in the event of any internal turmoil in the newly rich oil states, successor regimes are either army dominated or otherwise conservative in character.

To ensure that arms recipients do not assert their independence to a point where it would either hurt or even embarrass the United States, the latter may be expected to so regulate the supply of spares, other support facilities and above all ammunition for the sophisticated arms supplied, that recipient countries are held on a tight leash and are denied the means to pursue a really independent policy especially if such policy runs counter to US interests.

ARMAMENT TECHNOLOGY

Dominant powers wish to stay dominant. In armament technology, the two super powers are dominant within their respective alliances. Within the Western alliance and indeed in the world, USA is the dominant arms

10*Defence Secretary James Schlesinger "We shall not, I think expect to readily tolerate such a renewed oil boycot.t I think the reaction of the United States will be far more severe this time" (Indian Express & other Delhi Papers).

producer; but, Britain traditionally has had a versatile armament industry—including aircraft electronic and nuclear industries. Britain has continued to develop her armament and aricraft industries which have proved to be useful foreign exchange earners, besides providing gainful employment for sizeable bodies of skilled workers, engineers and designers. France too has had such industries traditionally which she has taken care to further develop in order, as much to acquire badly needed foreign exchange as to secure a measure of independence vis-a-vis U.S.A. and NATO. West Germany and Japan, the other principal allies of U.S.A. had broad based armament industries of their own before and during World War II. However at the end of the war, these countries were disarmed by the victorious allies and restrictions imposed on their armament industries. Gradually these restrictions have been eased and West Germany has recreated capacities to build a variety of conventional armaments and submarines of limited tonnage Japan in keeping with its general industrial policy has found it more rewarding. to build equipment based on designs purchased from U.S.A. Considering the high competence of German and Japanese industrialists and technologists and their well developed production bases, they will not have much difficulty in switching over to conventional armament production at fairly short notice. Their present policies however are based on concentrating on general industry rather than armament production which is precisely what U.S.A. wants.

The U.S.A. as the leader of the Western Alliance, has been insisting that her allies buy the bulk of their armament requirements from the U.S.A. in order to offset its expenditure in Europe in maintaining American troops and installations. The argument that in the interests of standardisation, allies ought to have common equipment (made in U.S.A.) has also been used. This last argument cuts both ways. NATO's European allies, especially Britain has used the same argument to get NATO nations to pool their resources under British leadership to get weapons made by or in association with Britain. In particular Britain would like to see the ground to air missiles and fighter bomber air craft designed and manufactured by her and her partners accepted as standard armament for NATO forces. The smaller countries of NATO have their own problems. Lacking armament industries comparable to those of Britain and France, not to speak of those of U.S.A.— these countries are in no position to compete with the well established leaders of armament industry. Their requirements of arms too are modest in comparison with the senior members of NATO. Yet the purchase of foreign military equipment does affect their foreign exchange position. But because they are not without bargaining strength, the generally accepted pattern is for the vendor's of major military equipment to NATO countries to subcontract work to the buyer countries in proportion to the quantum of their respective purchases.

THE GROWING SIZE OF THE ARMS MARKET

Further consideration of the ever-growing market for arms is relevant. World armament expenditure which was running at $ 137 billion a year in 1952, had risen to $ 222 Bn in 1972*11 and is now estimated at about $270 Bn. It is no doubt heaviest in U.S.A., U.S.S.R. and China, quantitatively as well as a proportion of the respective countries' GNP.

The Super Powers in order to maintain their technological lead have to invest heavily in defence R & D and armament production. Others especially the smaller countries, in varying measure, would perforce have to follow by buying armaments from one or other of the major armament producing countries. Yet others (like Pakistan or Israel) if aligned to a Great Power by Treaty or by secret understanding may obtain armaments either at nominal cost or even free of cost.

It was noted earlier that within Alliances, the dominant power tends to lay down armament policies and generally control armament production and distribution. This is especially the case with USSR which is so overwhelmingly powerful in comparison with its partners of the Warsaw Treaty Organisation (WTO) that the latter have little scope for carrying out weapon R & D or production except within the framework of military equipment and industrial policies laid down by Soviet planners.

In the case of the Western Alliance, the U.S.A. is dominant, but Britain and France have armament industries of their own which cater to their individual requirements as well as to those of some countries of the second and third world.

Although there is serious competition and rivalry as between Britain and France in capturing the European and Third World arms markets, the two in association with other West European countries have an even greater interest in meeting the bulk of NATO's own requirements of arms, for the obvious reason that apart from the arms market opened up in affluent West Asian countries, America's NATO allies constitute the largest and most homogenous market. The NATO arms market is also the most sophisticated since its forces include American forces who would always have the best weapons and equipment that American technology can provide.

Thus by catering to NATO requirements—or at least a reasonable proportion of such requirements—West European armament technology (i.e. British, French and to a lesser extent West German and Italian armament technology) would stay reasonably close to that of the World's leaders.

The U.S.A. is reluctant to see her NATO allies develop high technology weapon industries such as nuclear, aerospace, under water and computer, industries.

It is their lead in these industries that distinguishes the Super Powers from middle powers. Should the latter either individually, or more pro-

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11*Ref : World armament & disarmament : SIPRI year Book 1974 PP 205 et seq.

bably, collectively in groups also develop these industries, several consequences would follow. Firstly, the arms market of super powers would contract because of more manufacturers being able to offer competable weapons at comparable prices. This would make the arms industries of the super powers less prosperous and so more dependent on state subventions. Periodically replacing older armaments by more recent models would become even more expensive than it is.

Secondly, the influence that arms sales now secures for the super powers would stand considerably eroded because of the entry into the field of middle powers forming associations or groups, who would have their own armament industries.

The recent fierce controversy regarding the new fighter air craft for NATO, which has apparently been resolved by the decision of Denmark, Holland, Norway and Belgium to go in for General Dynamics F-16 in preference to the French Mirage F-1 (M53) has to be seen in this context.

Apart from the immediate reward of a contract for 316 air craft worth $ 2000 mn., the firm eventually hopes to net another $ 18,000 mn., worth of sales in the next ten years. This is only one apsect of the matter. The other and more serious one from the point of view of France and West Europe is that it would result in West European aerospace industry lagging further behind America's.

Parallelism in Super Power Approach

The U.S.A. wants a fairly coherent and economically strong West Europe—but not a West Europe which is also a militarily strong entity. Should West Europe add high military capability to its economic strength it would emerge as an independent centre of power in its own right and to that extent reduce the overall supremacy of USA although in practice West Europe would support USA as at present, on most world issues.

Likewise the Soviet Union would like East Europe to develop economically within the Socialist framework, so that incentives for defecting to the West would diminish and make for a more stable socialist alliance. Again in parallel with the military relationship prevailing between the leader and other members of the Western Alliance, the Soviet Union would not like any of its alliance partners to be militarily significant in their own right or acquire the competence to build weapon systems based on advanced technologies.

The Vulnerability of Middle Powers

The closure of the lucrative NATO market and their being shut out from high technology areas is only one penalty that middle powers such as France, Britain, Swedan and Switzerland are likely to suffer. There is another danger also to which they are exposed. As other countries create their own armaments industries, the size of the free armament market would

progressively shrink making it more and more difficult for them to sustain broad based armament and other high technology industries. For example Turkey which already has a sizeable armaments production base is laying the foundations for a strong aeronautical industry wihch would enable her to produce Mach 2 fighter bombers in a decade. She would no doubt need collaboration and help from a technologically advanced country. Northrops of USA—the designers of the successful F-5 and F-17 aircraft are in the field and may most probably succeed in netting the Turkish contract. Lockheeds with its improved F-104 and new Lancer aircraft are also in the field as also Britain with its Jaguar and Harrier aircraft.

Spain and Brazil are rapidly developing their armament production competence as is South Africa.

Israel, in order to insure against delays in supplies from USA, as well as to earn foreign exchange has already built up a respectable arms industry witnin her borders. This arms industry while meeting Israel's principal needs and earning welcome foreign exchange also provides Israeli leaders with considerable bargaining strength in their negotiations with U.S.A. for arms supplies.

Pakistan has reportedly struck a deal w'th France whereby the latter would help Pakistan to set up an aircraft and missile production complex. The plan appears to be to assemble Mirage aircraft in Pakistan from imported components and eventually build the entire aircraft system in Pakistan. Already Pakistan is manufacturing French helicopters and German anti-tank missiles under licence. The deal with France however would be far reaching in its effects. It rests on the premise that oil rich West Asians would finance the Pakistani venture—so assuring France of immediate returns in hard currency—buy the equipment turned out by Pakistan and also hire the services of Pakistani military personnel for training the forces of West Asian customers for Pakistani arms. This venture will confer on Pakistan the advantage that arms suppliers now have on their clients.

Such competence building on the part of the non-traditional armament producing countries, besides resulting in a shrinkage of the available market for the Majors,could also give rise to political problems for USA,the country which has consistently used armament supplies as an important tool of State policy. In the short space of a year, contracts for the supply of aircraft and sophisticated arms worth billions of dollars have been concluded by American weapon manufacturers with oil rich West Asian countries. Technically all such contracts would have to be cleared by the State Department. Yet such is the power of the military industrial complex in USA that their high powered salesmen can persuade key political and military figures in the recipient country as well as in USA itself to let the deals go through without the State Department being able to come in till it is too late. Considering the volume of American military sales to Iran, Saudi Arabia and a few other West Asian States it would be necessary for USA to loan the services of American advisers, instructors and technicians so that recipient countries may be able to handle and service the equipment. This has understandably

caused concern to members of Defence Appropriations Saudi Committee of Congress who consider that it is*[12] particularly concerned that the long term security interests of the United States might be jeopardised by large cash sales of sophisticated weapon systems in areas of potential conflict. Congressman Les Arpin observed that arms sales may become " a new way for US to become unwittingly embroiled in a commitment to another nation" and that "massive arms sales may lock us into incumbent regimes whose chances of survival are often minimal". This is one serious danger. The other, which was brought out by Congressman Du Pont is that US arms supplies may create imbalances in a troubled region. He demanded that by its unbalanced sales of weaponry US should not "promote the predominance of one nation over its neighbours or encourage an arms race. Criticising the recent sale of three submarines (and modern destroyers and air craft) to Iran he noted that "US is running the danger of encouraging Iran to enlarge its sphere of military activity in a way that may bring it into potential conflict with other nations far beyond the confines of the Persian Gulf".

These are indeed weighty arguments based on the sad experience of a quarter of century, and illustrate the dangers to which the third world is exposed because of the vigorous arms supply policies of the Super Powers.

US Senate is now considering legislation which would bring under closer State Department (and Congressional?) scrutiny the sales efforts of armaments manufacturers. The move may to some extent curb the sales of sophisticated arms to foreign countries; by the same token it would reinforce the main argument of this paper that arms sales is an important element of state policy of major powers.

The Under Developed World

Although super power confrontation may apear to be most serious in Europe, super power detente is especially stable in this area despite China's suggestions that the Soviet Union while appearing to be anxious about its Eastern front would strike at West Europe. This is because, whatever the secret ambitions of both super powers regarding Europe, neither can afford to destabilise the existing frontiers for fear of triggering events which may run out of control.

Defence Secretary James Schlesinger[13]* has declared unambiguously that any Soviet attack on west Europe with conventional weapons would elicit an American response with nuclear weapons. The immediate use of "nuclear weapons to halt a Soviet thrust, was (would be) intended to force the Soviet Union to negotiate", according to New York Times. The Defence Secretary while testifying before Congress reportedly indicated that "the first use of nuclear weapons even in very limited ways carries grave risks of escalation and would be considered only when the consequences of conventional defeat would be even more serious". This would place the use of nuclear

12*Times of India 16th June, 1975.
13*Hindustan Times, May, 31st, 1975.

weapons in its proper perspective—namely the threat to use them can be invoked only to defend the vital interests of a nuclear power or of an ally whose survival is of profound importance to the nuclear power. Hence the Soviet Union is unlikely to violate West Europe's frontiers and thus set in motion a chain of events which ultimately may lead to a nuclear exchange.

This leaves the tension spots in the Third World as the areas where the Great Powers would play their traditional power game.

Even in these areas, following the traumatic events of Vietnam, USA would not in future contemplate direct intervention. President Ford himself has announced that U.S.A. cannot fight other people's battles for them. USA would "help them, but not with U.S. military personnel ; but with arms and economic aid". 14**

This increases the importance of arms supplies (and selective economic aid) to sensitive regions of the world as an instrument of super powers' foreign policy.

In order to free themselves from the influence of Great Powers some of the countries of the Third World who have suffered in the past either from Great Powers or from their proxies, are endeavouring to build within their own borders, at least basic arms industries.

Yugoslavia, Egypt and India the original advocates of non-alignment and non-involvement in the quarrels of super-powers as the best policy for all countries and especially for newly emergent independent countries, recognised that non-alignment also has its dangers since it exposes countries to pressure by expansionist neighbours who can align themselves with a super power and draw on the strength of that super power to secure its own ends. Yugoslavia for economic reasons established a useful armament industry; India finding it difficult to obtain arms supplies on commercial terms from her traditional Western suppliers in times of crises established a very modest armament industry. But India is still far from being self sufficient in arms designing or production.

Egypt after the sad experiences of 1967 and 1973 has found it necessary to build up essential arms industries within the country to meet her own and Arab needs. Affluent Arab countries have promised financial support for the scheme but a reasonably strong armament base can be established only over a period of time. Till the industry is firmly established, the country in varying degrees would continue to be vulnerable.

Under developed countries, (UDC's) it is now admitted, are underdeveloped not because they are not endowed with natural resources, (indeed some of them are bountifully endowed by nature) but because they have failed to throw up enough dedicated leaders of adequate stature, comprehension and determination and so failed to mobilise their manpower resources and develop their full potential. The difficulties in the way of UDC's in developing their industries would be considerably magnified when UDC's attempt to develop armament industries of their own. UDC's would need

14**Indian Express, June 11, 1975

to obtain capital, much of it in the shape of scarce foreign exchange, weapon production know how and in some cases, special semi-finished or processed materials as well. All these would have to come either from one of the Great Powers or from an industrially advanced 'middle' Power. The transfer of weapon technology to a needy UDC as we have seen, would only come about when a technologically advanced country deems it politically expedient to part with the technology, besides getting generous financial recompense.

An important stage in a UDC attaining self reliance is to secure the collaboration of a technologically advanced country to set up weapon production facilities within its borders. But this is only a half way house and self reliance is attained only when the UDC uses such collaboration facilities as take off points for developing further needed facilities on its own. Given the character of and compulsions under which the political and bureaucratic elite in UDC's operate, the importation of technical 'know-how' from advanced countries may smother indigenous talent and perpetuate the dependence of UDC's on the technologically advanced countries. UDC's would need to guard against this danger.

LESSONS FOR INDIA

There are three main lessons for us from all this. First that India cannot afford either economically or strategically to be dependent on external sources for its essential defence needs. Hence despite the critical situation we are in, efforts would have to be made to build up our defence industry. Since ultimately defence industry as well as national security can only be assured by coordinated development of industry generally, more strenuous efforts are called for in building up our aerospace, chemical, electronic, general engineering, ship building and vehicle industries.

The alround build up of these industries would provide real economic muscle for the country and at the same time enable us to create an adequate defence production base on our own which would discourage covetous neighbours from considering aggressive actions against us.

Second, there could (will) be areas in which foreign collaboration may be necessary considering our as yet inadequate RD base. But collarboration with foreign agencies for the import of technology would have to be in strictly defined areas. Further, learning from our experience over the past two decades and more, it is cheaper to buy foreign technology outright in selected areas where we will be operating in a buyers market, rather than go in for collaboration agreements. Immediate and worthwhile rewards are obtained by widening and strengthening our production base. This would reduce the drain on foreign exchange resources, increase output and thus fortify our economy, provide employment as well as training for our workers, technicians and managers, and above all psychologically reassure

us. Hence the importance of judicious purchase of technology if that can save us valuable time and yield these benefits.

Third, as an immediate measure foreign purchases of equipment from abroad must be severely discouraged. Arms imports tend to perpetuate our dependence on others. It also creates and sustains local lobbies seeking to promote the interests of foreign arms suppliers. We can make do with minimal foreign purchases provided a our Defence R & D and Defence Production Agencies in cooperation with Services, do what others do—namely adapt boldly, known designs with necessary modifications. The emphasis has to be result oriented research.

We would do well to follow the example of Russian industrial planners who examphasise quite properly that if production agencies are to produce useful products they ought to conutinously upgrade thier process and product technologies. Likewise if research and development efforts are to be meaningful, they would have to be entirely production oriented. This is especially so in respect of defence equipment.

We can acquire self reliance and, correspondingly, immunity to external pressures if we ensure that our defence R & D and defence production agencies function as an integrated team whose sole function is to provide the wherewithal needed for the country's defence, in time and at bearable cost.

US ARMY SHIFTS EMPHASIS TO ARMOUR WARFARE

RAVI RIKHYE

IN an undramatic but steady shift, the US Army has reorganised itself for the post-Vietnam period. The heyday of the light infantry sover, and the major emphasis is on armour warfare.

Vietnam was the light infantry's war. Though at one time as many as 600 tanks were in Vietnam , among 7 divisions and 4 brigades there was only one armour formation, the 11th Armoured Cavalry Regiment, and that too a mechanised reconnaissance rather than a tank unit. All the other units—1, 4 ,9 ,23 and 25 Infantry Divisions, 1 Cavalry (Airmobile) and 101 Airborne (Airmobile) Divisions, the 173 Airborne and 199 Light Infantry Brigade plus a brigade of the 82 Airborne Divisions—were all light infantry. The principal means of movement was the helicopter: even the infantry divisions frequently had as many as 400 attached. A few infantry battalions were mechnanised, but generally the infantry was equipped with nothing larger than 81mm mortars. Riflemen carried as many as 1200 rounds of ammunition per man into combat to provide immense volumes of olose-in firepower; for the rest, firepower came from artillery and tactical air deployed in unprecedented quantity. A great (and in the end a possibly fatal) error was the substitution of men by firepower: less than 15 percent of the 550,000 troops deployed to the war zone were in manoeuvre battalions, sothat despite all the firepower, there was a perennial infantry shortage. When the Viectong and North Vietnamese fought pitched battles, the firepower quickly overcame them; but when they reverted to Phase II warfare, there was insufficient infantry to clean them out. This lesson, as shall be seen, has affected US Army plans for the future.

The end of the Vietnam War saw a rapid shift away from light infantry The 1 and 4 Divisions were mechanised, to replace the new deactivated 5 and 24 Divisions previously assigned to Europe or to reinforce Europe. The 9 and 23 Divisions were deactivated; the 1 Cavalry bacame a test division and the 173 and 199 Brigades were disbanded. In Korea, the predominently infantry 7 Division was deactivated. The 4 Armoured Division in Germany was deactivated, the 1 Armoured taking its place after leaving Ft. Hood, Texas to make way for the 1 Cavalry. The US then had only 4 divisions that were substantially light infantry. These included 2 Division in Korea, the 25 Division in Hawii, and the 82 Airborne and 101 Airborne (Airmobile) in the US. Of the remaining 8 divisions, 5 were in 7th Army in Germany (1 and 3 Armoured, 1, 3, and 8 Mechanised) 2 were for reinforcing 7th Army and based in the US (2 Armoured at Ft. Hood, Texas and 4 Mechanised at Ft. Carson, Colorado), and the 1 Cavalry was at Ft. Hood

which has been the only two-division base in the US since the Korean War, and that too only since 1961 when President John Kennedy ordered an expansion of US conventional warfare capability. Four infantry or mechanised brigades and one armoured brigade completed the US Army (171 Light Brigade in Alaska, 193 Light Brigade in Panama, 194 Armoured Brigade at Ft. Ord in California, 197 Infantry Bridage at Ft. Benning in Georgia and the Berlin Infantry Brigade.).

During the period 1969 to 1973 the US Army was too busy with the Vietnam withdrawal, the shift to a volunteer Army, and the need to build-up training and weapons programs thrown out of gear by the demands of Vietnam, to worry much about the limited number of units available or how they were best to be used. The only major addition was the reactivated 9 Infantry Division at Ft. Lewis, Washington, to bring the US Army to a grand strength of 13 divisions and a manpower strength that was to fall to about 756,000 (in 1975). It requires explanation how the super-power US proposed to meet its global commitments with this tiny force when even minor powers like Seden and Switzerland have 12 divisions, Turkey has 14, Pakistan 16 or more and India 28—to say nothing of China's 130+ and the Soviets' 167. The US is, of course, primarily a sea and not a continental power. As such it should not have gone into Vietnam, but that is another story. At the peak of World War II, for instance, it deployed only about 100 divisions,compared to over 300 for Germany and some 500 for the Soviet Union. Naturally, the deployment of a division 3000 to 9000 miles from home requires a commitment of three times as many troops per division as that required for a continental power fighting on interior lines of communication; also the US divisions were much larger and more powerful to begin with then their Soviet and German counterparts. It would nonetheless not be unfair to say that the main effort on the ground was that of the Soviet Union, whereas the United States effort was primarily on the sea and in the air, desipte the manning of a large army.

The World War II position was a reversal of that prevailing since the early 1860s, the US fielding very large armies in the Civil War, and putting 4-million men under arms from scratch in two years during 1916-1918. Since 1930 or so the US Army has generally at best managed parity in resources with the other services and has frequently been inferior, as at present. In the post-World War II period the US has relied on nuclear deterrrence to combat the large armies of the Soviet Union and China, and has maintained sufficient ground strength only to undertake limited interventions. Prior to 1961 the US Army had only 14 divisions. Under President Kennedy the figure was increased to 16; moreover, a drastic reorganisation of reserve units was begun. In place of about 30 divisions that could not be ready until a year after mobilisation, 8 divisions (including 2 armoured) and an eventual total of 21 independent brigades was raised or formed from reserves. The composition of these forces shows again the bias for infantry: only 3 divisions and 4 brigades were armoured or mechanised, the rest were all infantry. These formations were expected to be ready largely 5-weeks

after mobilisation. Faster mobilisation times were thought unnecessary: for one thing it was assumed that the buildup overseas could take place at a liesurely pace, for another the lift for these troops could not be organised before 4-weeks or more. By their nature and slow mobilisation times these troops were intended clearly for deployment outside the armour-heavy environment of Europe.

Given such premises, and given the shift to a 1 1/2-war strategy (a major war in Europe and a simultaneous limited intervention elsewhere), a 13-division structure was considered adequate. Of the 7 divisions in reserve in Hawii and the United States 2 were available for the Pacific, Carribean, or Latin America, and the rest for Europe.

The major innovation of the period upto the October, 1973 Mideast War was the organisation of the 1 Cavalry (TRICAP) division to test the large-scale intergration of the tank with the attack and troop-carrier helicopter. This division was described in an article by the author in an earlier issue of this Journal (TRICAP—New Dimensions in Armoured Warfare, USI Journal, October-December 1971). As conceived in 1971 the division was to have 3 tank, 1 mechanised, 3 airmobile infantry, and 1 Air Cavalry battalions organised in three brigades (armoured, airmobile, and Air Cavalry Combat Brigade); a second configuration tested added an attack helicopter battalion. The division was given 13,000 men, 3000 less than the standard US Army division. The idea was that manpower in the volunteer army would be limited, and that speed was more important than large units.

Least it be assumed that the small size and relative lightness of the division were unique to the TRICAP concept, it needs making clear that General Westmoreland intended for the standard US division to become lighter. It is difficult at this distance to evaluate how much of this idea was due to the light infantry bias developed during the Vietnam, War. At any rate, it soon became clear that there was inadequate armour with the division and the composition was changed to include 4 tank, 2 mechanised, 1 airmobile, 1 attack helicopter, and 1 air cavalry battalions, organised in three brigades. The Air Cavalry Combat Brigade ceased to exist as a separate formation, and was to be constituted as required from other division elements. Moreover, even the increased armour allottment was thought inadequate: in wartime, the 49 Armour Group from Ft. Worth, Texas would reinforce the division with 2 tank and 1 mechanised battalions so that there would be now 12 battalions, including 6 tank and 3 mechanised. That was the end of the light division theory.

It was decided in 1974 that the 1 Cavalry Division was to revert to an armour organisation. The whole concept of the triple-capacity division, experimental to begin with, has been dropped, and a seperate air cavalry combat brigade is to be created. The changes the 1 Cavalry has gone through show, in microcosm, the evolution of US Army thinking since 1970. It is also worth recalling that the Howze Board on airmobility recommended that the U. S. Army structure should include 3 Air assault divisions and 3 air cavalry combat brigades along with 2—3 air transport brigades.

With 8000 helicopters in its inventory the U. S. Army has plenty of helicopter transport, but there is only air assault division, the 101 Airborne, and 1 air cavalry combat brigade likely to be formed, With the New U. S. attack helicopters and troop carriers, plus New heavy lift helicopters planned, air assault will more into the second generation with these much more capable helicopters it is possible the question of adding or converting more divisions may be reopened. The reason for the abandonment of anything looking like light infantry or a light division was two-faceted: one, the newly recognised limits of nuclear weapons, two, the 1973 Mideast War.

Robert McNamara was perhaps the first important US defence official to understand that nuclear weapons were basically unuseable. To fire them would result only in mutual suicide as the adversary retaliated, and as such the US threat to use them was not credible in any situation short of a massive, very direct threat to US security itself. The limited US capability for conventional war meant that it had no means of countering adversary ploys that deliberately stayed below the nuclear threshold. For example, the US could hardly be expected to incenirate the Soviet Union and risk nuclear death in its own turn if the Soviets suddenly seized Berlin McNamara saw that nuclear and conventional forces were complamentry.. We in India have still failed to understand this, and have failed to accept the corrollary: the deployment of nuclear weapons does not imply reducetd but increased conventional expenditures; defence budgets must then escalaee sharply to meet the requirement for deterrent and conventional forces.

Though the US rapidly improved its global conventional warfar, capability in the period 1961-63, for the defence of Europe it still implicitly depended on nuclear weapons, not the multi-megaton monsters, but the tactical nuclear weapons which were supposed to stop a Soviet armoured attack to the west. The increase in the US Army and the reorganisation of reserves was intended, as can be noted from the composition, primarily to strengthen US intervention capability in non-European situations. The refinement of tactical unclear weapons into "mini-nukes" of kiloton and less yield obscured the critical issue with regard to the use of these weapons. NATO planned to employ them to stop a Soviet attack. But the Soviets also had them, and as the defence would be in relatively fixed positions, it was more vulnerable to tactical nuclear strikes than the rapidly-moving Soviet attack. So if NATO used nuclear weapons first, it would only legitimise the Soviet use; shattered by Soviet tactical strikes, the NATO forces would be in no position to hold the Soviet conventional onslaught. It finally began to be understood in the US that there is no substitute for strong, well-equipped conventional forces.

With the US unlikely to again massively intervene on the ground in Asia, understandably US interest in jungle warfare and light infantry began to decline to the point that today there is only one active division (25 Infantry, Hawii), one reserve division (38 Infantry, Minnesota), and one brigade (193 Light Brigade, Panama) that are specially-trained for jungle

warfare. Interest began shifting to armoured warfare in Europe. This interest did not suddenly come up because the US Army had nothing better to do. While the US was tied down in Vietnam, the Soviet Army had undergone a massive modernisation program that severely eroded, and in some cases reversed, the advantages that NATO forces in Europe had bad. One such former advantage was that wheras an American division earlier deployed twice as much artillery as a Soviet division, now the figures became equal. NATO battle-tanks were far superior to the obsolete T-54/55s that dominated armour in Eastern Europe, but the Soviets not only replaced them with T-62s, it has now begun inducting T-70s. Soviet armoured personnel carriers were little more than armoured buggies, but with the M-1970 (known by other names), carrying a 76 mm high-velocity gun and ATGMs, a new concept in armoured fighting vehicles was launched. Soviet anti-air forces were completed overhaulely, and in many cases completely re-equipped.

The result was that the Soviets finally had a better than even chance of overrunning Europe in a surprise attack. Their astounding success in neutralising Czechoslovakia within hours in 1968 also gave no comfort to NATO. Oddly enough, the prime exponents of the German blitzkrieg had become two armies with the most reason to hate the Germans; the Soviet and the Israeli. With Soviet parity in strategic forces, an increasing number of tactical nuclear weapons, growing pressures in the West for detente and a reduction in defence expenditures, and the massive improvement in Soviet blitzkrieg capability, there was a very real possibility that the Soviet Union could seize large parts of Germany and the Low Countries in a lightening fait accompli. The consequences of such a successful operation would be incalculable in the long run for the west.

Pressure was already building up in the US Army for increasing capability to meet a Soviet attack in Europe when the Mideast War broke out. Seldom before has the US studied a foreign war with such interest, becuase in miniature this war duplicated, for the first time, likely conditions in a European battlefield. It was the closest thing to a high-intensity war fought since World War II, with armour taking the lead on the ground and high-performance aircraft dominating the skies. There were massed battles of surprising ferocity, with hundreds of tanks and aircraft being lost within hours and days. Among the many lessons learned (or relearned) in the war was the supremacy of the tank as an offensive weapon and the immense potential of the new anti-aircraft and anti-tank defence. Most important, there appears to have been a growing realisation that quality alone cannot substitute for numbers when your adversary himself shows qualitative improvements. As a crude example, assume your opponent has a quality factor of 1. If you desire to be three times superior, you need a factor of 3. But should he make the small jump from 1 to 2, you must make a jump from 3 to 6. By making small marginal increases he can force you to keep making increases three times as big, which may be fine if your resources are three times as much, but not if his resources are greater or equal.

Because the tank was till supreme in the offense, there was a partial shift away from the devotion to helicopters in the US Army. The helicopter was an efficient defensive tank-killer, but lacked its firepower, protection, and shockpower in the offensive. For this reason, and becuase of cost considerations, the US Army has been deploying helicopters in battalion-sized units in Germany, not in brigade-sized or division units.

To increase numbers, a major step was taken. It was decided that logistic troops would be sacrificed for combat troops. It has long been the US Army position that combat troops cannot be sustained without logistic troops. But as has been frequently pointed out, Soviet armies are oraganised and trained for short wars and therefore maximise combat formations. Because of its superiority in combat formations, the Soviet Army would quickly overrun NATO troops, and there would be no question of sustained combat. Thus, US investments in logistic troops were dysfunctional. In a first reorganisation of the US 7th Army, some thousands of logistics troops were pulled out and various attack helicopter and artillery battalions activated. In a second, and more wideranging reorganisation, 18,000 support roops will be replaced by2 armoured or mechanised brigades, 2 additional artillery battalions, and 1 helicopter support unit. Of 7th Army's 190,000 men, some 80,000 are within combat divisions or brigades, and another 40,000 are likely to be in artillery/attack helicopter battalions under Army and Crops. Th's means something like one—of the logistic troops will be converted.

The two new brigade are to be activiated in the 2 Armoured and 4 Mechanised Divisions, which will now become 4-brigade divisions. Each division will now post one brigade on temporary duty to 7th Army for 6-months in rotation. US 7th Army will thus have 4 full divisions and elements of 3 more.

The conversion of 1 Cavalry Division to an armour configuration increased the reinforcement availabe to 7th Army. Previously the division had a global mission. Instead of now 2 Armoured and 4 Mechanised Divisions only being available, now a totalof 4 armoured and 4 mechanised division will be available after reinforcement. The US maintains forward stocks for 2 2/3rd divisions, but has another two division-sets in war emergency reserve. So it is necessary only to shift the personnel of these three divisions and the two dual-based brigades with their personnel equipment. This can be done in days without requisitioned civil air transport.

Next, 3 infantry divisions were reactivated, the 5, 7 and 24 Divisions giving 16 active divisions. 5 Divisions is to be mechanised, adding to reinnforcement capability for Germany. Infantry divisions can also be used there as airmobile anti-tank infantry. Furthur, there are calls to add more armour to 9 Infantry Division to permit a European role. Thus, 3 new divisions will become available for 7th Army.

Simultaneously, there appears to have been some reorganisation of the reserves. A third armoured division has been added, the reactivated 49 Armoured of Texas. This takes its place with the 30 Armoured of Tennesse

and 50 Armoured of New Jersey. The 49th is unique in that it is at present the only National Guard division entirely within one state and that its 6 tank battalions are all from the same regiment, the 112 Armoured of Texas. The 112 is the biggest reserve tank regiment, the next being a New Jersey regiment with 5 battalions. Previously there was only one mechanised division, the 30th from North Carolina. It is likely that more of the 5 infantry divisions will be mechanised, perhaps 1 or 2. The 47 Infantry Division from Minnesota is a fully Artic-trained formation and could concievably be deployed to Norway though its assigned station on war mobilsation is Alaska.

Whereas previously only 4 of the 21 independent brigades were armoured or mechanised, now 11 fall in this category, including 3 tank and 7 mechanised brigades in the National Guard and 1 tank in the Army Reserve. Army Reserve and National Guard battalions for reinforcing regular formations are additional to this total. (See Note k-4 for update)

In the context of Central Europe the problem is not just to provide more armour. Whereas in 1974 the US had available 5 tank and 5 mechanised divisions from the regular army and reserves, it will have by 1978 at least 7 tank and 6 mechanised divisions and possibly as many as 9 mechanised if further regular and reserve divisions are mechanised. Though this will be a big improvement in the US's armour capability, the problem remains of getting the heavy equipment over to Europe. The Soviets could bring in 40 to 50 divisions to reinforce their 27 in Central Europe within 5-6 weeks.

Presently the US has 4 1/3rd divisions in Europe and additional equipment for 4 2/3rd divisions. Of the additional equipment two divisions worth are in war emergency reserve, and even though the US Army does not say so, they should be available immediately. Some 70,000 men would have to be airlifted from the United States to bring 7th Army to a full 9 divisions. Such an airlift is a simple matter for the US—the intercontinental wide-bodied aircraft belonging to its European allies and earmarked for emergency use could alone lift this many men in two lifts. 7th Army would then consist of 1, 2 and 3 Armoured Divisions, 1 Cavalry Division, 1, 3, 4 and 8 Mechanised Divisions, plus an additional mechanised division from the three reraised divisions.

US 7th Army will in wartime hold southern Germany with the French I and II Corps with 5 mechanised divisions and the German III Corps with one armoured and two mechanised divisions. This is a total of 5 armoured and 12 mechanised divisions that can be deployed within a week, and the total will probably give a force-to-space ratio adequate to defend southern Germany.

These reinforcements do not, of course represent the sum total of US capability to bolster the defence of Central Europe. Three other divisions will be immediately available as they are maintained at a high readiness level. These are the 2 Marine, 82 Airborne and 101 Air Assault. They will go into theatre reserve for amphibious, airborne, and air assault operations. The first two roles are self-explanatory. The 101 Air Assault

Division would probably be best employed in conjunction with the air cavalry brigade and reinforcing attack helicopter battalions to block a Soviet tank breakthrough along a wide front. The 82 Airborne can be completely moved in 80-hours using a part of the C-141 force alone; the 101 Air Assault would require more sorties because of the bulky nature of its helicopters. The 2 Marine Division has its own amphibious lift.

The addition of these forces would approximately triple the US presence in Europe within a week or ten days. But the US is looking even further. Plans are being studied to give even the 1 and 3 Marine Divisions a European role. These formations are oriented towards the Pacific, and whereas the 1 Marine Division from California could probably be in Europe fairly early, the 3 Marine from Okinawa would require upto 30/40 to reach. There are also calls to add armour to the 9 Infantry Division and even the 25 Infantry Division from Hawii to give them a European capability. Similarly, the two new infantry divisions could also be sent to Europe, either as mechanised formations or as airmobile divisions.

At least in public, the US has not made it clear what role the reserves are to play in Europe. Nominally the reserve formations are available only after M + 35, but even before the recent reorganisation to improve reserve readiness, three divisions and several brigades were capable of faster mobilisation than M + 35. Presently, at least 10 brigades will be expected to mobilise within days because they will go to fill out the regular army and to make 8 divisions into 4-brigade formations. There is little doubt that mobilisation can be speeded up greatly, but it is unclear what these divisions will play.

Generally the assumption has been that the reserve divisions will move into the slots left by regular divisions sent overseas. Since in the McNamara days there were 8 divisions in two corps assigned for overseas reinforcement, the reserve mobilisation was also fixed at 8 divisions. These 8 divisions would then provide a general pool for further contingencies. As noted earlier, of the 8 two were for special duties, the 38 Indiana for reinforcing Panama and the 47 Minnesota for reinforcing Alaska. The aim was that in case of a global emergency countries might be tempted to cause trouble in north and south America and these divisions would provide a reserve force capable of fullfilling hemispheric and Alaskan commitments. To the extent that the 47 Minnesota Infantry is a fully Arctic-trained formation, it presumably could be deployed to Norway. The 38 Division is unlikely to find a role in Europe.

That leaves 3 tank, one mechanised, 5 infantry and one Marine division, plus 12 brigades (including 4 special mission). Surely it makes some sense to assign half these forces to Europe also. The problem with such a role is, of course, moving the heavy equipment for these divisions. A US tank division appears to weigh about 42,000-tons, a mechanised division is not much lighter at 35,000-tons. US sealift (including allied ships assigned to the emergency pool) will not start becoming effective till M+ 21. Moreover, the Initial Support Increment for each of the divisions moved to Europe

will also have to be lifted. While in theory the ISI is required to sustain a division in combat only after 30-days, in practice a good part of the 16,000 ISI troops per division are corps combat troops including artillery, engineers, and additional infantry/tank brigades. Additionally the merchant shipping will have to move the tremendous tonnages of ammunition, fuel, replacements etc that will be required for a European war. And once war breaks out reinforcement will have to be made in the teeth of Soviet submarine attacks.

Accordingly, the US is proposing to increase its airlift capability. Presently there are 70 C-5As, 234 C-141s, and something like 500 C-130s that could be employed for strategic reinforcement in a real emer ency. Now the US wants to modify over 100 wide-bodies civil aircraft to give them a payload of 55-75 tons each and the ability to quickly load and unload vehicles and other large cargo. It is also proposed to stretch the C-141s to increase their cargo volume by 30-percent to remove many of the volume-limits they operate under at present. All these measures, including an increase in the plane: pilot ratio to 1:4 through activation of reserve crews, should give the US the ability to move 25,000-tons a day for the first 30-days of an emergency. In other words, a division could be lifted every two days.

This added airlift capability would not only permit faster deployment of regular and reserve divisions, it would also permit the war emergency stocks to remain untouched. It is concievable that by M+ 30 the US can have something like 20 divisions in Europe, representing a five-fold increase in its presence.

There are two points to be made here. One, even if a real all-out conventional war is not envisaged in Central Europe, the mere ability to lift and deploy such large forces represents a deterrent to a potential aggressor. The US position with regard to the European ground war may be compared to a perennial debate regarding England's correct role towards Europe. Time and again it has been argued that England should provide the maritime contingent and not get involved on the ground, but equally it has been argued that holding the periphery of Europe does England no good if the Continent falls to a hostile power—England must also have the ability to influence matters on the ground. This is, of course, a gross simplification of a complex problem; nonetheless, clearly the US must also be prepared to contribute as much as it can to the ground defence of Europe and not only be prepared to dominate the oceans. The US cannot maintain a large presence in Europe during peacetime for a number of military and political reasons. The next best thing is to have the ability to greatly increase its forces there in an emergency.

Two, a common argument in India is that considering the very large number of Soviet divisions, what will even 20 US divisions do in case of war? The Soviet can deploy 40,000 tanks, the US at most will deploy 10,000. There are 167 Soviet divisions; as such the US cannot expect to by itself turn the adverse balance in Europe If Germany could put up 30 divisions

then it can be agreed that the US contribution would be significant. But with Germany restricted to 12 divisions and with the possibility of increase ruled out for political reasons, surely it is pointless for the US to hope much from its 20 divisions.

This sort of argument misses the point that a maximum of 100 Soviet divisions is deployable to the west. The rest are in Asia or are unlikely to be available until some months after mobilisation. Further, of these 100, some 20 will require to be deployed on the flanks, leaving 80 for Central Europe. It is by no means clear that the 60-odd Warsaw Pact divisions from East Europe will be available to the Soviets in a conventional war against NATO. More important, the Soviets lack the logistic capability to attack all along the front and their doctrine calls for divisions to be replaced in the line as they are exhausted. Western doctrine calls for keeping a division in line and replacing the individual casualties, so while each western division is available for line deployment the same is not the case for Soviet forces.

Yet further, US divisions deploy 10-times as many anti-tank missiles as Soviet divisions and have much more mechanised infantry. Their power in the attack may be no greater than the Soviet division's but their defensive power is much greater. Twenty US divisions will make a contribution out of proportion to their numbers as long as NATO is on the defensive.

The real problem is that once the Soviets see the US sector is powerfully reinforced, they may simply ignore it and attack across the north German plain which is more suited to an armoured offensive and is weakly defended even after mobilisation. This is because the UK, Netherlands, and Belgium are no longer willing to shoulder the defence burden required of them. Perhaps 5 US divisions assigned to theatre reserve could be sent to the north German plain, but that is unlikely to be adequate, and because NATO logistics are not as standardised as Soviet logistics, there might be real problems in maintaining these divisions outside the US sector.

In summary, it can be seen that the US is making strenuous efforts to correct the shortcomings in its own sector and after 1978 will be reasonably sure the Soviets cannot break through here. The question now becomes one of doing something for the rest of Germany. From the military point of view it becomes difficult to see how Germany can be kept to 12 divisions on a 60-million population. Admitedly those divisions are very powerfully armed—almost 4000 main battle tanks and 9000 APCs. Yet the force to space ratio is inadequate excluding the now reorganising US sector. From the purely military point, it is possible to wonder whether the US and Germany should not take over the whole Central European front with 30 active reserve divisions each, leaving the other powers to back up the rear. The political difficulties, of course, are enormous.

Nonetheless, the US has begun to rationalise the defence of its sector. Like it or not, it may have to take the lead in rationalising the defence of the rest of Germany.

1. The US Army today is training also for desert warfare. It is difficult to say how serious the US in its threats to seize Arab oil-fields: the US position may only be a pretense to put Arabs under pressures.

At any rate, the Army itself is preparing for desert warfare if called on. The first of three Ranger battalions has been activated The 1/75 Infantry (Ft. Stewart, Georgia) has 612 men, some 250 less than a standard US army battalion. It is intended to seize landing areas for the 82 Airborne Division. This division has jumped in exercises over South Korea after being fl own 9000-miles straight from US bases. In addition to this division, 4 others including the California-based 1 Marine Division are known to have received extensive desert-warfare training. It is possible that the others include that 2 Marine Division, 101 Airborne, and 9 Infantry. Presumably the 7 and 24 Infantry Divisions will also receive desert training now that they have been reactivated.

2. Though a US armoured division has 16,500 men compared to the Soviet 9,500, the number of medium tanks is equal (about 325). There is, however, ony about 1500 mechanised infantry in the Soviet division compared to 4500 in the US. The US division has some 135 major and medium ATGM, compared to 15 for the Soviet division, and 119 heavy, medium, field guns and heavy mortars compared to 96 (including rocket-launchers). While the US deivision is only marginally superior in the attack, its 3-to-1 advantage in mechanised infantry and 9-to-1 advantage in defensive ATGMs gives it a defensive strength of about twice that of a Soviet division.

A US mechanised division is 16,300 men to the Soviet 12,000. The Soviet division is superior in tanks, 255 mediums to 216. It has 4500 infantry compared to 5400 for the US, 72 major anti-tank weapons compared to 162, and 144 guns, heavy mortars, and rocket launchers to 115 for the US division. The US division is still stronger in the defensive, but possibly by no more than 1.25 times (Excludes 4th Bn for US Division).

Two cavets require adding. One, the Soviet artillery increases appear to have been made by breaking up artillery divisions and as such the division may not be getting net additions. A US division can count on an additional 90 guns from corps artillery alone as its own share, excluding air defence artillery. Two, on mobilisation, the US divisions will be probably reinforced by individual battalions from reserves. A US Army armoured division has 6 tank and 5 mechanised battalions, a 7th Army mechanised division has 4 tank and 6 mechanised (3 tank and 7 mechanised standard). Each division may take three battalions more for a total of 8 tank and 6 mechanised in the tank divisions, and 5 tank and 8 mechanised in the mechanised divisions. Also, as far as is known, there are very few independent Soviet brigades, whereas the US will, on mobilisation, deploy a number to Europe. Many may well be attached to divisions to further increase their strength. Though many will not be mechanised, they can be utilised as airmobile light anti-tank infantry reserves, an important asset in the event of Soviet tank breakthroughs.

We must therefore caution against assuming the usual 3 to 1 superiority required for attack in the case of the Soviet Union and the United States. Something approximating 4 to 5 to 1 may be required, particularly considering that the terrain favours the defender in the US sector. This may be a good reason for the Soviets to avoid this area and go instead for the North German sector, where only about 10 British, German and Dutch divisions may be available after reinforcement.

3. Recently there have been major changes in the anti-aircraft and anti-tank capability of US formations. Whereas before the 1970s there was no organic anti-aircraft capability within the division, there is now a battalion with 48 weapons, divided equally between quadruple-SAM launchers and 20mm multi-barrel cannon. The West German Roland is to be procured to replace the Chapparal, a first-generation short-range SAM.

In addition, each manoeuvre battalion has 4 to 6 teams with the Radeye shoulder-fired SAM, to be replaced by the second-generation Stinger. These units were deployed before the Mideast war, and it does not seem there will be any increase as together with air-defence battalions, there is already a formidable AA capability.

Previously a US infantry battalion had 106 mm recoilless rifles and 18 90 mm recoilless rifles together with 3 ATGM vehicles. The ATGMs were in the battalion AT platoon; the 1063 were distributed with each of the 3 rifle companies (2 each) and the reconnaissance platoon and the 90mm RCLs were given on the basis of two per weapons section, one weapon section (with 2 MMG also) being assigned to a rifle platoon. New there are 18 heaay ATGMs, all TOWs accurate to 3000—meters with 95-percent kill probability; 27 medum ATGMs, Dragons on the basis of 1 per rifle squad; and large numbers of light

AGTMs (M-66) to be given to individual riflemen on the basis of how many can be carried. Airmobile battalions will have even more ATGMs. The new ATGMs are very much more deadl ththaneyir first-generation predecessors.

It is worth noting that US infantry battalions now have 5 companies. Previously there were 3 rifle and 1 HQ Company, now there are 3 rifle, 1 HQ, and 1 weapons company. National Guard units are also now being manned in this fashion, at full-strength to aid in early mobilisation.

4. Information received when this article was in press indicates that of the 21 brigades in the reserve structure, 2 brigades (6 battalions) and 9 extra battalions will go to round out the 16 active army divisions; 6 brigades and 3 extra battalions (22 battalions) will be affiliated with active divisions giving six of them a fourth brigade; 4 b.igades will be special mission brigades; one will be a school demonstration brigade; and 8 will remain independent. The 8 National Guard divisions will have 82 battalions.

THE NUCLEAR EXPLOSION MILITARY IMPLICATIONS

MAJOR GENERAL S.N. ANTIA (RETD.) PVSM

THE radio active fall-out from India's epoch making nuclear explosion at Pokhran ranges has more or less settled down; so has the initial fury of the resultant Political fall-out with the exception of Pakistan as was expected.

There are some interesting and unique features of our first ever nuclear explosion. India is the first developing country to have entered the portals of the exclusive nuclear club without any sponsorship and entirely with its own efforts. It is the first country to have carried out a near-perfect under ground test in its maiden venture with little radio active fall-out. What is even more significant, that it is the only country so far which has pledged itself before the world forum that the explosion will be entirely used for peaceful purposes unlike other members of the club whose primary aim and objective was to build up a nuclear arsenal. However, since any nuclear explosion is synonymous with the manufacture of the atom bomb or nuclear and thermo-nuclear weapons it is but natural that India's pledge for its peaceful application would be viewed with some measure of genuine misgiving and scepticism.

In the aftermath of explosion much has been spoken and written about the political, economic, scientific and technological and peaceful uses of the test. Nevertheless despite Government's solemn assurances there persists a general belief in our country and elsewhere—no less in the rank of file of our Armed Forces—that India is now on the threshold of manufacturing and stockpiling atom bombs or nuclear weapons and thus becoming a nuclear military power. This belief is also shared by some political parties who in the past also have been advocating such a policy, without fully comprehending then as now, the true impact and implications of using nuclear energy for military purposes.

Should India then make the atom bomb or build up a nuclear arsenal as being demanded by some vocal sections of the public opinion in this country and generally taken for granted by many other world powers?

India's strategic military aims and objectives stem from its policy of non-alignment and of durable and stable peace on the sub-continent. It has no territorial ambitions; its military strategic posture, therefore, is one defence against external aggression, particularly against the likely threats posted by China and Pakistan. It can, therefore, be argued in the context of our present strategic military environment the possession of nuclear weapons will hardly make any impact on India's military posture.

In so for as China is concerned there is no forseeable danger of any

military confrontation in the near future. Beset with her own internal problems of cultural revolution, wide ranging purges in the armed forces and struggle for succession, at best China would confine itself to supporting the wars of national liberation, internal subversion and upheaval to pave the way for an ideological victory without taking recourse to conventional war or nuclear holocaust, the latter particularly in the context of the existing strained Sino-Soviet relations.

In the event of a war with Pakistan it would be neither in our national or international interest to seek destruction of the main cities of Pakistan even though these cities may have both political and military significance. To use strategic nuclear weapons against other likely targets such as airfields, defence industrial installations and communication centres would require a most efficient intelligence system backed up by an equally efficient surveillance system to pin-point locations of tragets and monitor the results of the strike, both of which we do not possess. In any future conflict with Pakistan our aim will be as in the past to cripple its war potential and this can be achieved with India's qualitatively and quantitatively superior conventional armed forces backed up by a fairly soundly established industrial base without causing misery to the innocent civilian population.

Pakistan is now seeking some form of a nuclear guarantee from the super powers as a consequence of India's explosion which she is unlikely to obtain. Since Pakistan and China have collaborated in the past against India and are likely to do so in the future, Pakistan at best may obtain some assurance from China against any possible nuclear threat from India. However, in the context of the likely Sino-Soviet confrontation such an undertaking is bound to have an escalating effect. The most probable course of action which is likely to emerge as a result of the present situation would be a Sino-Pak defence agreement. Notwithstanding the above, any nuclear threat to Pakistan will bring into focus a policy of retaliation. Therefore, any offensive nuclear posture by India must take into account passive defensive measures against likley retaliation. This alone will be a gigantic task and financially beyond the capability of India let alone any developed country.

In order to manufacture and possess strategic nuclear weapons we have yet to develop and test a suitable delivery system. Unless we can make a phenominal break-through in space, electronic and other sophisticated technological fields such as developing an efficient surveillance, intercommunications and electronic systems as well as other paraphernalia to support a nuclear strike, it is inconceivable that we will have a credible nuclear strike capability to hit strategic targets on mainland China or Pakistan. Militarily, therefore, apart from the cost effectiveness and other allied factors, the possession of strategical nuclear weapons will not in any manner achieve significant results except perhaps to take a heavy toll of human lives and bring untold misery and suffering not only to the present but future generation too.

Should India then opt for the policy of "minimum deterrent" in manu-

facturing and possessing tactical nuclear weapons instead of ICBMs?

The manufacture of tactical nuclear weapons militarily will mean that ammunition for certain types of conventional weapons such as heavy mortars medium and heavy artillery guns, certain ground to ground and air to ground missiles, naval guns and submarines torpedoes be modified to take nuclear war-heads. This is possible provided certain modified to the main armament are carried out. The weapon itself wlli act as the delivery system. The ranges of these types will be limited to tactical batttles at army-corps and divisional level. But how will these be utilised in tactical battle?

In the North, North East and in North Kashmirthere will be no worthwhile nuclear targets as the terrain and the pattern of fighting will not permti large scale concentration of troops. The close proximitiof our own combat troops to the enemy will be another serious limitatnn. The field installations and depots will generally be out of range and even if within range will not warrant the use of a nuclear-war-head to effect the outcome of a battle. In the Punjab the proximity of towns and villages will cause problems and any attack on Pakistani civilian lives through nuclear weapons will bring down retaliation on our own population which will not necessarily be confined to the combat zone.

A major disadvantage of tactical nuclear weapons will be the delegation of authority to combat commanders to take a decision on hir own in escalating the tempo of war. No commander who is actually fighting a battle will want his initiative or leadership curbed or interferfered with during its course. What thentwill be the criteria for using nuclear weapons, what the yield, what the targe? A panicky commander may use them too early, thus escalating the war and inviting retaliation not necese rily on his own troops but in any part of India. A cautious commander may wait until the last moment and thus jeopardise his command. It would be unfair to saddle field commanders with this onerous and awesome responsibilities. Any dilution or division of responsibility will be equally disastrous.

As the destruction between a nuclear explosion meant for peaceful and warlike purposes is so thin, so is the distinction between strategical and tactical nuclear weapons. Where does the former start and latter end In nuclear context there is no clear cut delineation between the two. In any event the total effect of these types of weapons on escalation and retaliation remain the same.

Some other military aspects of tactical nuclear weapons that need to be taken into consideration are: reorganization of the armed Forces in order to carry out a nuclear threat or to be able to meet it; de-novo reorientation of training which is now primarily based on conventional weapons; evolving new tactical doctrines. Thetrain ing of troops particularly in battle innoculation will have to be carried out under realistic conditions with tactical nuclear weapons will have to be overcome if the morale of the troops is not to suffer and which will require development of leadership qualities parti-

cularly of junior leaders to the highest pitch of efficiency and motivation.

In practical terms, therefore, the use of tactical nuclear weapons will be militarily unsound.

There are other concomitant problems connected with the use of nuclear weapons; special clothing for the troops to ward off the dangers of nuclear fall-out and radiation; shelter for them to retire to immediately after detonation; covered vehicles such as tanks and armoured personnel carriers (APCs), which can absorb certain amount of radiation for troops to traverse across an area subject to nuclear strike; a medical set up geared to nuclear medicine and science; efficient surveillance capability and reliable and speedy intercommunications of the type and standard provided in manned space flights. Each of the above individually and in its totality will require adequate material resources, great and sustained ingenuity in science and technology, a solid and reliable industrial base and abundance of financial resources to build up a military nuclear capability. In the context of our present interna lpolitical and economic crisis the utilization of the results of the explosion for military purposes will not only be illogical but suicidal. The Government's policy, therefore, of utilising our newly found technological and scientific knowledge for peaceful purposes is based on sound principles and a pragmatic appreciation of domestic and international coimpulsions.

The theory that possession of nuclear weapons would lead to political blackmail or serve as a "balance of terror" is outdated and without any validity. No one has yet used such blackmail nor is there any possibility of doing so; an era of detente is the main theme now of reducing international tensions.

Pakistan may acquire the necessary nuclear know-how within a decade and we hope that it will not be tempted to use it for warlike purposes. While we should rightly concentrate our efforts and energies in using our knowledge of nuclear science and technology for peaceful purposes our options need not be closed-in other words—keep the plutonium dry for a rainy day. It is also hoped that while we in India take immense pride in our epoch making achievement and in the sober and very sound policy of Mrs. Indira Gandhi and her government in regard to the use of the nuclear knowledge for peaceful purposes only, that any future Government at the centre whatever the political party or its composition it will not deviate from the existing policy for the benefit of teeming millions in our country in particular and for humanity in general.

To those who are enamoured with the manufacture and possession of nuclear weapons it will be prudent to remember that there will be no victors in a nuclear war—it will only be a phyrrhic victory brought about by a desperate and irresponsible decision of a Government or individual who controls it.

REOPENING OF THE SUEZ CANAL

Maj K K Dogra, EME

INTRODUCTION

The Middle East as the geographic centre of the land mass on Earth has always held the key to the fortunes and the course of history of the entire world. In recent times, if the closure of the Suez Canal in the 1967 six-day war between Egypt and Israel shifted the international military and trade balance enormously resulting in the increased naval presence in the region of the Soviet and the US, and the virtual withdrawal of the British from it, the joining of hands by the OPEC in the wake of the 1973 Arab-Israeli War in raising the petroleum prices disrupted the global economy. The reopening of the Suez by President Anwar Sadat of the UAR in June 1975 after eight years of closure, similarly, is an event of great epoch, politically as well as economically. There is a growing concern in the coastal and inland states of Indian Ocean that with the reopening of the canal the growing Soviet-American naval rivalry in this sensitive region might sharpen further. There is an air of expectation about the dawn of new era of trade relation between India and the West. There is a requirement of readjusting our foreign trade to cash in on the development. An attempt is made here to analyse the various shifts this event is likely to bring about directly or indirectly concerning Indian trade and security and suggest a plan of action.

REOPENING OF SUEZ CANAL AND BIG NAVAL POWERS

Egypt has thrown open the Suez Canal as a gesture of peace to the world in order to help the lives of all friendly and peace-loving people. The closure of the canal followed the capture of the Eastern Bank by Israel in the 1967 six-day war. The Egyptain Army crossed the canal in the 1973 Arab-Israeli War and regained the northern half of the Eastern Bank and the rest in the disengagement agreement negotiated in March 74. The canal will, however, remain closed to Israeli shipping until there is a final Arab-Israeli peace settlement. It has been indicated by President Sadat that cargo bound for Israel on ships of other nations may be permitted through, if Israel makes further concessions for settlement between the two countries.

About Rs 300 crores have been spent on the massive salvage operations leading to the reopening of the 165 kilometer long canal on 05 June 75. Outbreak of Arab-Israeli War eight years ago, and construction of a cause way

by Israelis in Yom Koppur War of October 73 thoroughly cluttered up the canal. A little over a year ago, President Sadat launched work for clearing the canal which is the man-made waterway and connects Mediterranean with Red Sea - the accident with orient. The United States, the Soviet Union, France and Britain sent their naval help and bomb disposal experts to help Egypt clear the canal. Unexploded munitions by the thousands, bombs, mines, rockets, mortar shells, etc have been recovered from the bottom of the canal and its banks.

Many of these had been shot into the canal by the Israelis. But the Egyptian Navy too had mined parts of the canal and Red Sea. Fifteen ships had got stuck in the canal when it closed. These had to be towed away and some of them dissected. Then there was the debris of sunken boats and crashed planes. Ten ships had been wrecked. These had to be cut to pieces by salvage firms before removal. The most tiring task of them all - involving many men and much labour - was breaking the causeway which the Israelis had built across the canal to enable the troops to march to the Western Bank. As per the press report, the man behind the difficult clearing operation was Mr Marshour Ahamed Mashour, Chairman of the Suez Canal Authority. The canal had been closed temporarily once before —after the Anglo-French-Israeli attack on Egypt nearly two decades ago, following Egypt's nationalisation of canal. The story of how the canal came to be conceived and executed is very interesting but outside the scope of this article. Suffice it to say that Napoleon had once thought aloud about a canal in the Suez region. Ultimately the Suez, the brain-child of a French diplomat, Ferdenand de Lesseps, was formally opened in November 1869 by Empress Eugenie of France. It was a great and royal occasion with Verde composing the Opera Aida to mark the event.

The Suez Canal played a major part in Britain's gun-boat diplomacy in the heydays of its empire. But now Britain has little power to wield "East of Suez". The British Navy will not be represented pemanently in the Mediterranean except at Gibralter, after 1977. Britain is withdrawing its naval forces from both Malta and Cyprus which was a base for the Anglo-French operation against Egypt in 1956.

Today half of the world's warships cruise the Mediterranean. The US reportedly maintains a permanent force ie Sixth Fleet, of two fighter groups based on an aircraft carrier and an amphibious group. It is estimated that there are on an average 45 American Naval ships in the region, including nuclear powered submarines carrying ballistic missiles. The French have also launched a new strategy of deploying more ships in the Mediterranean. To checkmate USA, Soviet Union maintains an equivalent naval force in this region. The Russians, moving out of the Black Sea, are said to keep 60 to 65 ships in the Mediterranean. Naturally the Russians have keenly awaited the reopening of Suez Canal.

To reach the Indian Ocean and Persian Gulf, the Russians have had to send their ships through South Atlantic or bring them over from Vladivostok in the Pacific Ocean. The logical question is whether the military

balance in the Indian Ocean will tilt as a result of the reopening of Suez Canal. The Americans have declared that they will try to keep a force in the Indian Ocean to counteract any Soviet expansion in the Persian Gelf or the Indian Ocean. There is a pre-war convention against the passage of battleships and aircraft carriers through the canal. But this will not apply to smaller military naval craft, unless President Sadat decides to prohibit the transit of all warships through the canal.

The reopened Suez Canal cuts voyage time on three major routes. Via the Cape, it is about 11,000 miles from Persian Gulf to the Mediterranean ports. Through the canal the distance will be less than 5,000 miles. The distance between London and Bombay is cut short by 4,000 miles. Destinations in North-West Europe will now be around 6,500 miles of steaming from Gulf. The distance to American East Coast ports will be about 8,000 miles, instead of about 12,000 miles round the Cape of Good Hope. Simultaneously with the reopening. the Egyptain Government is planning a major streamlining of the canal at an estimated cost of Rs. 5,000 croies. The towns of Suez, Ismalia and Port Said are to be rebuilt and expanded. President Sadat's canal dream includes its deepening and widening to take in super heavy carriers and, perhaps, battleships upto 25,000 tonnes. The heavy oil tankers will not be able to use the canal at present because of operational limitations and this will force them to go round the Cape of Good Hope. To solve this problem Egypt has undertaken the construction of SUMED pipe lines to pump the oil from Red Sea to Port of Alexandria in Mediterranean. The heavy oil tanker will be able to deliver oil in SUMED pipe lines in Red Sea which will be pumped to Port of Alexandria in Mediterranean under adequate pumping machinery.

SUEZ REOPENING MAY FURTHER INDIAN OCEAN RIVALRY

There is growing concern in the coastal and inland States of the Indian Ocean basin that with the reopening of the Suez Canal the growing Soviet-American naval rivalry in this sensitive area might sharpen further, placing the regional countries in a politically embarassing position.

It is visualised that the Soviet attempts to go ahead with its politico-military strategy of establishing a firm naval presence in the Indian Ocean is bound to be matched by the American determination to control the vital sealanes through which nearly half the world's oil supplies pass from the Persian Gulf to both the hemispheres.

The latest Soviet arms deal with Libya, which reportedly entitles the Soviet fleet to use Tripoli and other Libyan ports in the eastern Mediterranean, is already leading to a outcry in the West that Moscow is making an ambitious bid to extend its naval power to the Indian Ocean through the shorter Suez route. The more moderate Arab countries like Egypt have also reacted adversely to this arms deal because of the fear that the Soviet Union is bent on exploiting the volatile power politics of the Arab world for extending its own hegemony in the region.

The US feels that the Russians are secretly establishing port facilities in as widely scattered places as the Libyan coast in the eastern Mediterranean, the Iraqi Naval base near Basra in the Persian Gulf and the Somalian seaboard in the Indian Ocean, besides utilising the existing installations at Aden in South Yemen. The American opposition to the increasing Soviet Naval presence in the Indian Ocean is taking the shape of a grand counter-strategy for containing the Russian influence with a combination of massive arms sales to friendly littoral states like Saudi Arabia, gulf states and Iran and increased US Naval movements backed by highly trained air-mobile marine divisions for swift military intervention should the need arise for it.

Strange Identity Of Interest

It is now known that one of the major considerations that prevailed in Washington in lifting the embargo on American arms sales to Pakistan was the increased pressure from such diametrically opposite sources as China and Iran which have acquired a strange identity of interest in preventing the growth of Soviet influence in the Indian Ocean. What India is concerned about is not merely the extension of the Soviet-American rivalry, but also the kind of role that China is trying to play to complicate matters and sharpen the conflict of super power interests in the region.

The Soviet Union is fearing a Sino-American collusion in-the-offing to dominate the South-East, and East, Asian regions under the guise of shielding them from Soviet influence. The Soviets have taken pains to warn a number of Asian countries about military designs and political machinations of the Chinese and American attempts to offset their losses in Indo-China with increasing dominance of the South Asian region.

The Chinese are going a step further in combining their anti-Soviet propaganda with militant support for the communist insurgents in countries like Burma, Malaysia and Indonesia even at the risk of offending the established regimes there. The fraternal messages sent to the communist parties in these three countries which have been given wide publicity by the Peking Radio speak of full Chinese support to them in their struggle against imperialism, revisionism and reaction. This three-cornered formulation is obviously aimed not only at the Soviet Union, but also the Ne Win, Tun Razak and Suharto Governments in Burma, Malyasia and Indonesia notwithstanding the latter's attempts to build up better relations with China.

OUR NATIONAL SECURITY AND INDIAN OCEAN

The Indian Ocean and who moves in it, must always be of interest to us, for though a conventional seaborne attack is now wholly improbable, naval dominance by others in the seas to our South can imply pressures of many sorts—political, economic and even perhaps subversive. Our list of priorities and the massive finances implied make it impossible for our country to hope to emerge as the main naval power in this area. The seaborne

strength we have is, essentially, for what can be called watch and ward duties plus information concerning who is moving where. We have neither the strength nor, under international law, the right to prevent naval expansion of other countries or their movement without inhibitions on the waters of the Indian Ocean. But we do have the option to remain wholly uncommitted in the attempts made by the Super Powers to establish a naval hegemony in our vicinity.

On land, protection lies in the maintenance of appropriate forces suitably located. At sea, especially with our naval limitations, protection seems to lie in keeping our territorial water under surveillance and denying of facilities to other powers, other than those which we are obliged to provide under the international law. At the present, this has been our policy and it is to be hoped that we continue following this policy. The land threat is visible and easy to perceive. The threat from the sea is less easy to comprehend and it may be smaller but it is there.

These days Super Powers have developed the capability of tracking any surface-going force in the ocean by keeping it under satellite or electronic surveillance. The only way to achieve surprise is to operate submerged under sea waters and this has led the Super Powers to develop nuclear propelled missile firing submarines. These nuclear powered submarines utilize new weapon system in scoring a hit on the target and destroying it-by subsurface missile weaponry with electronically controlled propulsion at a selected place of exit with homing on to an air surface or ground target. These nuclear powered submarines are no longer dependent on oil for refuelling. However, they have to surface after 35,000 nautical miles for charging the batteries. This aspect is very well taken into consideration by super powers while looking out for naval bases. US and USSR are both busy in looking out for such bases in Indian Ocean, which could provide such facilities for their submarines.

Linked with our national security problems in Indian Ocean are a few significant developments which have taken place very recently. India, Australia and Sri Lanka have been the pioneer littoral states who have voiced their concern over Indian Ocean becoming a zone of tension because of the naval presence of Super Powers. Now, we have heard that Sri Lanka's efforts to persuade the world's big powers to follow the United Nation's resolution that Indian Ocean be cleared of power rivalry have failed. Sri Lanka's permanent representative to the UN has reported that all efforts towards a fruitful dislogue between the big powers and Indian Ocean littoral states have been in vain. Meanwhile, it is on the cards that the forthcoming Non-aligned Group Foreign Ministers' Conference in Lima (Peru) will discuss a new strategy for keeping the peace in the Indian Ocean in the face of the reaction of the Super Powers. Iran and Indonesia have also joined the other littoral states in voicing concern over the power rivalry going on in the Indian Ocean. In a communique issued after President Suharto's official visit to Iran in June 75 the two countries stressed that security in the area was a matter for the littoral states alone.

INTELLIGENCE LISTENING COMPLEX IN IRAN

The US is building up an "intelligence listening complex" in Iran backed by its most sophisticated technology. The US willingness to design and build this intelligence listening complex in Iran, potentially able to monitor all communications in Persian Gulf area, underscores the converging interests of the two nations. The US in return would have access to all the information gleaned by the facilities. Defence of the oil rich Persian Gulf region is critically important to the US and they would like the defence to be highly competent. A communications intelligence gathering facility would complement and extend Iran's growing military dominance of the region, thanks to the US military supplies to the Shah worth atleast 15 billion dollars every year. The Shah with Saudi Arabia and leaders of oil-rich Persian Gulf Sheikhdoms wants to minimise Soviet influence in the area, an objective shared by the US. The US has also won assurance from the Shah that Iran would not join any future Arab oil embargo imposed against the US.

Soviet and Western interests have met and clashed in Iran ever since the second world war. In 1946, the US and British acting through the United Nations helped to frustrate Soviet efforts to overrun the North-West Azerbijan region of Iran. Predictably, therefore, the Kremlin has expressed its uneasiness over Iran's agreement with the US for building up the intelligence listening complex. The Soviet have termed this to be a spying complex and allege this has been set up in lieu of similar syping complex elsewhere which was closed down earlier. (This is a reference to the American base in Peshawar, Pakistan, from which a U-2 spy plane took off and was brought down by the Soviet Union in 1960. The incident led to the collapse of a Summit meeting between the national heads of the two countries and relations remained cold for some time after that.)

Linked with the American presence in the Indian Ocean is the operation of its bases in Ethiopia near Asmara. US retains a very limited presence at Kagnav base at Asmara. Soviet Union has said that the US is under pressure to close its similar spying bases in Ethiopia, near Asmara, and this may be one more reason for the US to switch over to Iran. The Iranian complex being much nearer to the Soviet border than other bases, its establishment cannot but anger the Soviets who are unlikely to accept that it is purely an Iranian affair without outside involvement. Moscow is likely to point out the provisions of the treaty between Tehran and Moscow signed on 15 September 62, and still in force which prohibits foreign bases on Iranian soil. It is also declared in the treaty that Iran would never be a party to any aggression against the USSR. However, the longetivity of the agreement in history may be questioned. Soviet suspicions about the complex are all the stronger because the Shah of Iran, after a short period when he seemed as if he might break with Wasington, is increasingly seen by them as the Trojan horse of the US in the Persian Gulf and the Indian Ocean areas.

Soviet Bases In The Indian Ocean And Diego Garcia

Soviet Union has just about completed its bases on the Indian Ocean to stockpile missiles that could threaten the US ships and planes in the region. The bases located at Berbera in Somalia and island of Scotra are capable of storing both surface to air and surface to surface missiles. Soviet Union has greatly expanded its housing storage facilities in Berbera within the last two years to support Russian naval operation in the North-West region of the Indian Ocean. The Soviet Union has also bases in Iraq and Aden. The reopening of the Suez Canal—closed to Egypt after 1967 West Asia War - would increase the Soviet Union's flexibility to support or reinforce its units in the Indian Ocean. This is revealed in the apprehension expressed by the US Defence Secretary in June 75 when he justified the US bases in Diego Garcia.

The US has argued that Diego Garcia base is necessary to counter the increasing Soviet Naval presence in the Indian Ocean region. (Diego Garcia is a British owned island in the Indian Ocean. The US obtained a 50-year lease from the British in 1966 and about 430 Americans and 20 British personnel are stationed on the 6700 acre island). In view of the Soviet Naval expansion in the Indian Ocean, the US State Department and Pentagon seem to have found convincing reasons for the establishment of an American Naval and Air base on Diego Garcia.

President Ford has also certified that construction of base is essential for the national interest of US. It was termed only as an expansion of what was so long described as an "austere communication facility" into a base for the US Naval and Air power in the Indian Ocean. Most of the countries around this ocean have registered vehement protests and even many influential Americans do not see any justification for the move. The US justified its action on the argument that the Soviet Union has bases at Berbera in Somalia and in Iraq and Aden, that about half of the world's seaborne oil is in transit through the Indian Ocean at any given moment and that Iran and Pakistan are looking up to the US for protection in the area. But, after its defeat in Vietnam, how long US should or could continue to be a world policeman is the big question.

The US seems to be in a hurry to turn Diego Garcia into a naval and air base because of the Super Power rivalry. The Suez Canal has reopened giving the Soviet fleet quick access to the Arabian Sea and Gulf and US reconnaissance aircraft may not be able to operate from Thailand for more than another year. The base may be designed for use of aircraft carriers and Polaris submarines. It may be interesting to ponder over the so called vital US interest in Indian Ocean. The National Security Council of US administration itself once reported that these interests were of limited strategic importance and in any case could not be protected by military intervention. This conclusion has been strengthened by the lesson in Vietnam.

There is also opposition from the Senate for building this permanent naval base.

For the protection of whatever genuine American or international interest may be there, a better alternative to setting up a military base and importing tension into the hitherto peaceful Indian Ocean will be to seek by agreement with the Russians, a limitation on the deployment of force in this area. This would be in line with the UN's declaration of Indian Ocean as a zone of peace which no military presence of the Big Powers should disturb.

INDIAN HOPES OF NEW TRADE HARVEST

The reopening of the Suez Canal after eight years of closure is also an event of great economic significance to India. There is an air of expectation about the dawn of a new era of trade relations with Western and other nations.

For nearly a century the Suez Canal has functioned as a vital link between the East and the West. The Suez is the most important man-made waterway in the world. It cuts out the need to go round the Cape of Good Hope. The distance from Bombay to Odessa in the Black Sea is shortened by two-thirds, between Persian Gulf ports and London by almost half and from Tokyo to Rotterdam by a quarter. (When the canal was closed a good deal of trade between India and Europe and North America was on the circuitous route round the Cape.)

Almost the first thing the shipping lines did when the canal was closed was to impose a surcharge. Called the deviation charge, it worked out as follows: India - USA 12.5 per cent, India - UK/Continent 13.5 per cent, India - East Europe 13.5 per cent, India - USSR 25 per cent and India-East Europe via Black Sea 25 per cent.

Besides these surcharges, in the last few years, freight rates went up for other reasons. The Suez reopening will definitely prove advantageous to India. First, there will be no justification to keep the surcharge any more. Secondly, the distance between Indian ports and many export destinations will be drastically reduced, leading to a cut in the freight rates.

All this should lead to promotion of greater trade between India and the West through reduction in the cost of transport which is sometimes more than the value of the cargo. This is the general expectation. However, it may be mentioned here that super heavy tankers cannot use the canal in its present shape because of operational limitations. Egyptians are saying that it will take sometime before they are able to accommodate tankers of 150,000 - 200-000 tons which can then complete with large vessels going round the Cape. Till such time super heavy tankers can ply in Suez Canal it may be more economical for them to go round the Cape of Good Hope, than small tankers on their own steam with increased gasoline prices to go through the canal.

At the same time, there is a feeling that the shipping companies have been used to the surcharge all these years and may not care to withdraw them. The Indian Institute of Foreign Trade is confident that the surcharge will be lifted. Possibly this might be a matter of hard bargaining at the shipping conferences and it is to be expected that our exporters and importers will be able to play their full part in the negotiations that are to follow.

Cut In Costs

Roughly the annual saving in freight to Indian trade should be between Rs 30 and 40 crores. This would mean that cost of exports will be reduced and to that extent Indian goods will be competitive overseas. Similarly, the landed cost of imports to India will come down. The Institute of Foreign Trade feels that, at any rate, the reduction in the voyage time will have a definite impact on India's trade. The average cut, between India and the USA, will be from the present 45 to 35 days, between India and Europe from 35 to 25 days and between India and USSR from 55 days to 27 days.

It will, however, not all be an unmixed blessing. There are minus points which India will have to reckon with. India is having sizeable trade with countries East of Suez in engineering goods and textiles. The total value of exports, which was Rs 115 crores in 1965–66, has gone up to Rs 240 crores. Part of the increase may be due to higher prices.

According to some estimates, exports to the eastern zone rose by 16 per cent a year. Exports to countries West of Suez, on the other hand, came down to a mere Rs 40 crores in 1973–74 from Rs 62 crores in 1965–68. The exports, of course, have picked up in 1974–75 notably in sugar and tea, but still the trend is there.

The reopening of the canal may have an adverse effect on India's trade with West Asian and African countries by exposing the country to severe competition from the more sophisticated goods from America and West Europe. Possibly the advantage India now has in textiles will also be lost in competition from Japan and South Korea.

It is difficult to precisely assess the potentiality right now. This will be known in a year or two. The hike in the oil prices has more than offset the gains in India's trade with the Gulf countries. With the reopening of the Suez, India has to evolve a new trade pattern that can meet the challenge from the western nations. There seems to be no doubt that the reopening of the canal will help India's export trade in general cargoes such as tea, coffee, cashew kernel, oil-cake, tobacco, jute manufactures, cotton textiles, leather, ores and mica moving to the UK, the European Continent, including East European countries, the USSR, North America and North African countries.

An interesting aspect of the whole exercise will be how the tonnage that will become surplus for India is going to be balanced. The shortening of the route and the reduction in the voyage time will definitely give rise to

surplus tonnage for the country. This can be profitably used to improve trade with South-East Asian countries. In the altered political conditions after US withdrawal from this zone, a whole new vista has opened up for India.

Soon after the closure of the Suez Canal, one witnessed the dislocation of shipping routes, long hauls, delayed deliveries and increase in the cost of commercial credit. This dark chapter will soon be forgotten, particularly when the Suez Canal comes in to its own after the initial period of trial and tribulation.

A point that has been argued is whether insurance premia will come down. There are already reports that insurance firms are not willing to cut rates. They say that Suez will still be within the war zone and there are other hazards. The clearing operations that have gone on for the last several months show that Suez will be quite safe and, therefore, there is every possibility of the rates coming down.

Fuel Saving

The shortening of the trade routes will result in a saving of fuel costs by atleast 15 per cent. There will be no need to carry extra bunkers. Indian business interests expect that in the first few months there will be a rush to secure passage through the Suez. This may lead to considerable delays n operation and waiting for clearance. All this calls for better coordination and planning of India's export trade. For example, India should try to acquire warehousing facilities now woefully lacking at important ports. Goods can then be supplied at short notice.

The pangs of the energy crisis are felt all the world over. India can very profitably consider export of more coal to the European Countries. With the coal sector having turned the corner and doing so well, the reopening of the canal provides a splendid opportunity.

CONCLUSION

The reopening of the Suez Canal will further Indian Ocean rivalry between the Super Powers. As the principal country of South East Asia which is becoming the cockpit of these big power rivalries, India has to take into account the grave consequences of the interaction of the mounting political manoeuvres and increasing naval activities in the region. India should remain wholly uncommitted in the efforts being made by the Super Powers to establish a naval hegemony in this area. But while trying to steer clear of any direct or indirect involvement in this game of establishing naval hegemony by Moscow, Peking and Washington it could provide a positive lead to the like minded countries in the Indian Ocean basin on how best they should proceed to keep this a zone of peace. And in the coming years Indian diplomacy will be put on the mettle, as it copes with the comp-

lex combination of factors that are going to accentuate the Big Power scramble for influence in the area in the wake of the reopening of the Suez Canal and increasing the flow of arms into the region.

The reopening of the canal will help provide greater trade between India and the West by reduction in the cost of transport, saving in voyage time and surplus tonnage. The world over, the reopening of the canal has rightly been acclaimed as a matter of great significance. It holds out a great opportunity to India to bolster her trade and formulate plans to cash in on the development.

REHABILITATION OF DEFENCE SERVICE PERSONNEL

LIEUT GENERAL K.P. CANDETH, PVSM. (Retd)

IN THE past, officers of the Armed Forces were traditionally drawn from the land owning or wealthy classes and the other ranks from the Yeomen stock. Therefore, there was no problem of their rehabilitation as the officers on retirement went back to their Estates or lived on their private income and the other ranks went back to the land. With the ushering in of the new social order, the type of intake into the Armed Forces, both of officers and other ranks, materially changed. Officers and men now come into the Defence Services for careers and depend on their pay and allowances for their livlihood. Therefore, the problem of rehabilitation of Armed Forces personnel, thrown out of employment at an early age, is a very real one which merits earnest consideration. Unless something is done, these people who are fit, healthy, young and trained in the use of arms, will get disillusioned and more and more disgruntled and thus fall easy prey to anti-social elements.

Because of the type of work and the physical and mental strain that officers and men have to undergo in war, it has been found necessary to prescribe age-limits for various ranks. Further, because of the pyramidical rank structure of the Armed Forces, officers and men have to be phased out, although they may be fit for promotion and further service in higher ranks. This early retirement has been one of the main causes why service in Armed Forces has lost its appeal and why bright youngmen of the type the Armed Forces need, are not coming forward in sufficient numbers to join the Army, Navy and Air Force. The unpopularity of the Armed Forces as a career is shown by the fact that even after lowering of standards, the Forces are thousands of officers short of their authorised strength.

At present officers retire at 48 or later and other ranks after 28 depending on their rank. They are thus thrown out of employment at a time when their responsibilities and financial liabilities are at their heaviest and they are generally too old to compete for entrance to other departments of Government service. They are also at a disadvantage when applying for jobs in the private or public sector as they would be competing against people far younger than them. Further as officers and men join at a very early age, they are generally not in possession of high academic degrees which places them at a disadvantage in searching for civil employment.

On joining the Armed Services, an officer or an OR is sent to a training institution where he undergoes rigorous and intensive training. Particular emphasis is laid on inculcating a high standard of discipline and personal behaviour, physical fitness and endurance and good management

and administration. Moreover, throughout their carreer, both officers and men have to undergo various courses of instruction and pass promotion tests and Selection Boards before they can get advancement in rank. Thus a good deal of money is spent by the Government in training the officers and unlike in the Civil Services, education in the Army is a continuing affair. It is, therefore, utterly wrong to think that the education standard of an officer is indicated by the Civil or public examination he had passed prior to his entry to the IMA. So to insist on a B.A. or M.A. as a prior condition for various Civil appointments is irrelevant in the case of an Army officer. If education is judged purely by degrees obtained, then most of our Chiefs of Staff and men like Churchil would be considered illiterate.

The considerable managerial and administrative skill and experience gained during his service, is not appreciated at present by the civil authorities and those in charge of public and private sector enterprises. In times of stress and in war officers of the Armed Services have taken over civil administration with marked success. There should be no difficulty in fitting them in Civil Appointments both in the Civil Services or in the Public or Private Sector in peace especially if they are given a short pre-release training in some institution such as the Administrative Staff College followed by a short on the job apprenticeship. A Lieuenant Colonel with 20 years service should not find it difficult to function as a Collector of a District or in the Customs Department provided he is given a training course and does a period of attachment prior to taking over. It is a national waste to let the skills and abilities of this body of dedicated men who have given their best years to the service of the nation, go waste as at present. It, therefore, is time that the Government adopted a completely fresh approach to the problem of resettlement of Armed Forces Personnel.

There is no reason why the retiring age should be different for different Departments of Government service. As in the Civil Services, persons who enter the Armed Forces, should be guaranteed service upto 58. If this is accepted, it would mean that they would have to be atuomatical lateral entry into appropriate civil posts, in keeping with the particular person's qualifications and experience, when the Defence Services personnel reaches his age of retirement of usefulness in the Services. Keeping in view the considerable training and experience gained in the Services, there should be no difficulty in fitting Armed Forces personnel into appropriate Civil appointments, if the concept of guaranteeing Armed Forces personnel service upto the age of 58 is accepted. Such a scheme would have the following advantages:—

(a) It would make service in the Armed Forces much more attractive and would improve both the quality and standard of entry into the Defence Services;

(b) The Civil Departments and the Public and Private sector would have a strong leavening of the Armed Forces personnel, which would result in better discipline in the Civil Services in the public and private sector.

(c) It would also raise the productivity in production oriented industries.

However, before the above can be accepted, the existing concept of separate civil and military careers services, would have to be abandoned. It would also meet some resistance from existing civil service employees and those in Private and Public Sectors as it would mean that officers and other ranks would be inducted in positions above some of them and this would affect their promotion prospects. However, if the idea that Government service is one and that the Armed Forces personnel have a right to a fair deal is agreed to, then these difficulties can be overcome.

Should this idea be accepted, following action would have to be taken:

(a) Selection Boards would have to be set up to
  (i) determine the suitability of retiring personnel for civilian duties.
  (ii) allocate personnel to different posts/Departments.
  (iii) decide on appropriate civilian equivalent to Service ranks.
  (iv) decide on civilian posts and department to which Service officers can be transferred.

(b) Special regulations would have to be made providing that rules of recruitment framed for civilian posts and services, shall not be applicable to service personnel being transferred to them on conclusion of their military service.

The danger of Armed Forces personnel trying to get out of the Armed Forces to softer civilian appointments, is relevant and care must be taken that no transfer is allowed unless the officers or other ranks' service in the Armed Forces is satisfactory.

I feel that so far we have had no plan which deals with the problem of rehabilitation of Armed Forces personnel in its entirety and the measures taken so far have touched only the fringe of the problem. It is, therefore, essential a scheme such as this with or without modifications is introduced which ensures continuity of service for Armed Forces personnel to the same age, as their civilian counterparts.

ADMINISTRATION OF MILITARY STATIONS

BRIGADIER OS BHANDARI

INTRODUCTION

THE system of territorial division of the country into stations, Sub Areas and Areas (also called Districts before partition) was started during the British regime. This organisation was basically designed to meet the problems of internal security. But the respective Commanders also exercised full command and control over all units located within their jurisdiction. Besides, the responsibility of conducting operations (such as in the NWFP) prior to partition of the country was also vested in these Commanders. After independence and particularly in the recent past, conditions have considerably changed. The responsibility of internal security is, by and large, vested in the armed constabulary and para-military forces. The operational responsibility rests with field formations who have their own command and control set up. Areas and Sub Areas are left with little responsibility. These static formations and field formations work in water-tight compartments. It is only at Command level that both the operational and static responsibility are combined. The present organisation and functioning of Stations, Sub Areas and Areas have, therefore, become anachronistic and consequently breeds inefficiency in an otherwise highly efficient system which exists in the field formations. The aim of this paper is to discuss various aspects of the functioning of Military Stations, Sub Areas and Areas and suggest a change to streamline the system.

FUNCTIONS

These organisations are responsible for the following:—

(a) Internal security.
(b) Administration and control of ASC units.
(c) Administration and control of military hospitals.
(d) Administration and control of EME workshops.
(e) Provision of Dairy.
(f) Provision of MES.
(g) Liaison with civilian administration.

Internal Security. The major burden of internal security when Army is called up falls on the Station Commander. Sub Area and Area Headquarters virtually act as post offices in the chain of command. These Headquarters have hardly any resources in terms of troops, equipment and transport, which are generally found from lodger field units and formations. Internal security situations are normally controlled from Command Head-

quarters and all resources including troops found under their instructions from field formations. The main burden of execution rests squarely on the Station Commander. Station Headquarters are normally located where civil district headquarters already exist and once orders from the Command Headquarter are received, Station Commander deals with any situation without interposition of intermediate Headquarters. The Station Commander has also adequate legal powers to do so. No intermediate authority is necessary between Command and Station Headquarters for internal security.

Administration of ASC Units. All stations have a supply depot. The provisioning of this supply depot is planned at Army Headquarters and executed by Command Headquarters. Local purchase powers rest with the Station Commanders. The responsibility of providing ASC supplies to the dependent units in the station is that of the Station Commander. There is no necessity of having any ASC staff at Sub Area or the Area Headquarters. Moving of stocks from one depot to another can also be controlled at the Command Headquarters. The powers now vested with the Sub Area and Area Headquarters can be exercised between the Station Commander and Command Headquarters. It is understood that this point is already rlceiving attention at the Army Headquarters and a proposal to withdraw all ASC staff from Sub Area Headquarters and to centralise administration of ASC units and installations at Area Headquarters is under consideration. This could well be done at Command Headquarters, instead of Area Headquarters.

Administration of Military Hospitals. The location of various military hospitals is decided at Army Headquarters. The strength of beds and various specialist facilities to be provided depend on number of troops and families the hospital is serving. There is no medical staff at Sub Area Headquarters. At present little, if any, measure of control over these hospitals is exercised by the ADMS at Area Headquarters. His command and control over these hospitals can hardly be effective as the same is based on a few visits to the hospital every year. Hospitals can be administered by the Station Commander and technically controlled from Command Headquarters.

Administration of EME Workshops. For static units, small station workshops exist in all stations. Control over them is at present exercised from the Area Headquarters. It is ridiculous to see Area and Sub Area Commanders visiting these small units just for the sake of doing so which can well be done by a Station Commander. Technical supervision can be exercised from the Command Headquarters and CEME set up at Area Headquarters can be dispensed with.

Provision of Dairy. This is already controlled at Command Headquarters level and Area and Sub Area Headquarters have nothing to do with it. The system has worked efficiently and could be followed in respect of all units as is suggested in this paper, thus doing away with sub Area and Area Headquarters.

Provision of MES. The MES organisation has, on the quiet, mushroomed into a large and unwieldy organisation. In the old days the Garrison Engineer came directly under the Garrison Commander (Station Commander) but today this has almost been reversed. While the Station Commander is responsible for all works in a station, the authority for these works is exercised by the Zonal Chief Engineer. In fact certain projects are decided without the knowledge of Station Commander and are controlled in water-tight compartments by the MES authorities. It is not uncommon to see senior officers from the office of CWE and Zonal Chief Engineer visiting projects even without the knowledge of the Station Commander. Many drawbacks are covered under technical grounds but when things go out of control, the Station Commander has to answer. The present procedure of sanctioning works is centralised at Command Headquarters while subordinate static formation headquarters act as post offices and only create delays in the system. The financial powers are either exercised by the Station Commander himself or by the Headquarters Command who are the de facto authority to release funds even if administrative approval is given by intermediate headquarters. All works (except minor works) are co-ordinated at Headquarters Command level, and Area and Sub Area Headquarters are not even in picture as to what goes on in a station. The system of works and the entire MES functioning can also be controlled at the Command level. The station MES resources can be strengthened and CWE and Zonal CE done away with.

Liaison with civilian Administration. This is adequately done at Station Commander's level and from the station point of view, the Sub Area and Area Headquarters are serving no useful purpose. Matters of policy will have to be initiated and pursued from the Command Headquarters as the Sub Area Commander's level is rather low to deal with the state government.

COMMAND AND CONTROL

Other than the service units discussed above, a station may have a few class 'A' and 'B' establishments, installations and base workshops. In respect of such establishments static headquarters exercise still less control at present. These are controlled by Army/Command Headquarters and their local administration is done by the Station Commander. Take for example an Infantry Regimental Centre located at a station away from Headquarters Sub Area. Its recruitment and training policy is controlled by Army Headquarters. Local administration is done by the Station Commander. Disciplinary powers of the Commandant are the same as that of Sub Area Commander. Why is then a Sub Area Headquarters required? The static formation commanders only visit them once or twice a year for administrative inspections which is a mere formality. In these visits, they can hardly know the exact functioning of these large establishments to be able to exercise any measure of command or control. During

their visits most of their time is spent in visiting institutions within these establishments which are efficiently organised.

On the disciplinary side, all full colonels' command, the Station Commander (who normally is a Brigadier) and the Sub Area Commander are vested with the same disciplinary powers. The Sub Area Headquarters has, therefore, no responsibility in this regard. The local static units, if placed under the Station Commander, could at once render the Sub Area Headquarters redundant. The Station Commander is in a better position to know what goes on in a unit rather than the Sub Area Commander whose assessment is based on a few visits, lasting a couple of days in a year. During these visits instances of over-indulgence in social activities are not uncommon.

COMMANDERS AND STAFF

It may be unkind but to put it bluntly, officers posted at Sub Area/ Area Headquarters are often those who have been left out from the normal stream of the Army career. They have little interest in the future of the Army. In Cantonments, planning is now done for the next 20 years or so but the officers on staff are either on the verge of retirement or re-employed. It would be too much to expect them to show any measure of interest as they would naturally be interested only in their own resettlement. During nearly two years tenure of the writer in a station as Station Commander, the Area and Sub Area Commanders and their staff have hardly shown any interest in the future of the station. All boards for the future KLP and construction are convened under the orders of Command Headquarters and done by the Station Commander.

ANALOGY

While the Station Commander is the one who actually runs the administration of the station and in most cases is of the same rank as the Area Commander, he does not carry out the administrative inspection of the static units. The Annual Confidential Reports of officers are neither initiated nor remarked upon by him. The Station Commander does not even come in the chain of report ng even as technical officer. Indeed, at times, if the Station Commander does not belong to one of the Area/Sub Area units, static formation commanders show an uncompromising attitude towards him and indeed try, indirectly, to erode his authority.

MAL-ADMINISTRATION

Even though Area and Sub Area Headquarters are meant to increase administrative efficiency, it is common knowledge that most cases of misuse of manpower take place in these static organisations. I am given to understand, though I have no access to the facts and figures, that over 75 per cent

cases of corruption and cases involving moral turpitude take place in these staticorganisations.

CONCLUSION

Area and Sub Area organisations are a legacy of the past and have outllved their usefulness. What is needed now is an organisation to deal with the complex problems of governing, efficiently and conomically, military station in the present context. The Station Commander should be given greater powers. Indeed, he already enjoys these powers by virture of his rank but not by viture of his appointment.Most station Commanders are Brigadiers and so are the Sub Area Commanders. Even on the disciplinary side the Sub Area Commander's powers are the sam as that of establishments commanded by Colonels. He, therefore, exercises no authoriry over administration, training or discipline of units in a station. Sub Area Headquarters could be done away with straight away. The new organisation should be based on control from Headquarters Command on the same line as system followed by the External Affairs Ministry which controls aver 100 missions abroad or the system which is being followed within the Command for Military Farms. The Station Headquarters should be strengthened and the functions of Areas/Sub Areas centralised at Headquarters Command. The new organisation needs going into but will certainly result in financial saving and, what is most important, in streamlining the system to make it more efficient.

DESIGNING AN ENVIRONMENT FOR CREATIVITY IN THE SERVICES

(A Study Report)

INTRODUCTION

"Creativity" is a quality which is given many names—imagination, vision, ingenuity, inventiveness and so on. In simple terms one can define creativity as the ability to apply a person's mental faculties and curiosity to some area to produce or create something new as a result. Creativity can cover a wide range—from devising a better way of doing a routine job to creating something new hitherto unheard of.

For long, it has been held that the creative mind is the privilege of a few. Of late this belief has been successfully challenged and many psychologists have convincingly proved that creativity is latent in all individuals—the question being only one of degree. There would perhaps be only a small percentage in whom, perhaps, this quality is not powerful enough to be of use either to the individual or to the society. It is perhaps more realistic to assume that every person has some degree of creativity rather than to reconcile to the idea of its being limited to a selected few. Such an assumption has been useful to many organisations and efforts at systematic development of the creative talent in individuals seem to have produced convincing gains for such organisations. It is, therefore, necessary for us in the Services also to evaluate the place of creativity in our total scheme of things and depending upon the findings, to find out ways and means of harnessing this talent for the good of the organisation.

The Services have long subscribed to the view that implicit obedience to orders is a "sine qua non" for efficient performance of the tasks allotted to individuals and units. If this is to be accepted as gospel truth then perhaps it would be infructuous to proceed with the paper any further. There is no doubt that obedience to orders is a prime requisite in the Services. Such obedience has to be inculcated in the individuals from the outset by rigid norms of behaviour reflected in standards of discipline to be maintained leading to autocratic leadership and control. However, a dispassionate analysis may reveal that in such a spartan atmosphere, creativity might still find a place. This hope is bolstered to a certain extent by the biographies of great military leaders. From ALEXANDER to ROMMEL and PC LAL, one can find the application of a creative mind to win great battles. For after all what is stategy but the application of a person's mental ability to find a new way of surmounting an old problem. The innumerable 'case studies' in military history books would definitely indi-

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* A study report prepared by a selected team of officers during Senior Defence Management Course at the Institute of Defence Management (IDM). Secunderabad.

cate that creativity has a place in the military environment. To what extent it is desirable, can it be confined within reasonable bounds so as not to make it come in conflict with the need to implement orders without questioning them, and so on are the points which one needs to go into detail. However, before, embarking on this assessment, it would be useful to first try and analyse what the creative process is, and how it can be developed.

THE CREATIVE PROCESS

THE creative process has several patterns:—

(a) Logic
(b) Idea linking
(c) Problem solving
(d) Free association

Logic

In the first process, logical thinking, the person approaches nature with a hypothesis or theory which, through testing and verification may lead to a conclusion. In other words, it is the process of being able to deduce or come to a conclusion, where one thing is assumed because another is true. If the statement is made that 'A' is true (or untrue) and therefore 'B' is true (or untrue), logic has been employed in creating 'B'.

Idea Linking

A person using this method forms links between many different ideas or pieces of information. Education, by increasing an individual's store of knowledge, may also increase the potential number of links. It does not necessarily follow that only highly educated people are more creative through the idea linking pattern than a person with less education. It is seen quite often that the experience of a person other than formal education, can also contribute to the store-house of information and thereby to creativity.

Problem Solving

The problem solving approach incorporates the following steps:—

(a) Obtaining the facts
(b) Identifying the problem
(c) Formulating alternate solutions
(d) Selecting the best solution

We are all quite familiar with the problem solving approach and we use it every time some-one comes to us in a troubled state and we ask him

first "What's your problem? After identifying the problem we think of a possible solution, finally putting into practice the one that seems best.

Free Association

In this pattern it is contended by many that creativity occurs when ideas are permitted to flow and be expressed without being censored.

The free association theory therefore, holds that creativity is a product of the whole mind, unconscious as well as conscious and that the conscious may well be the richest storehouse for creativity.

TECHNIQUES FOR IMPROVING CREATIVITY

The undermentioned three techniques are being employed for stimulating creativity in most organisations. Scientific investigations have shown that those who have participated in such techniques, have acquired an ability to produce significantly more good ideas than those who have not.

Analytical Technique

This technique relies on a thorough and logical attack on the problem and its various elements. This is further sub-divided into:—

(a) Attribute listing

(b) Input output technique

(c) Grid analysis

In the 'Attribute Listing Technique', the first step is to isolate the major characteristics or attributes of an object or an idea. Each major attribute (such as colour, size and cost) is then considered in turn, and is changed in all possible ways. There is no attempt made to limit the suggested changes. In this technique no idea is rejected, no matter how fantastic it may seem. In fact, no evaluation or judgement is carried out until after all the ideas have been enumerated. After this the ideas are evaluated in the light of limitations imposed by the problem and the situation.

The 'Input Output Technique' firstly involves specifying the desired end results or output. Secondly, the available sources of energy or inputs, are defined. Finally every possible way of converting the available inputs into the desired output is explored. This technique is often helpful to establish any limiting requirements or specifications which the final solution must meet.

The 'Grid Analysis' method involves listing the major variables of a problem on both sides of a two dimensional grid so that all possible combinations can be considered.

FREE ASSCOCIATION TECHNIQUE

This technique places a very strong emphasis upon the free flow of thought. It permits and encourages each participant to offer any and all ideas that may come to his mind. Many forms of free association techniques have been developed. They range from 'brain-storming' to such exotic techniques like 'Synectics', 'SDI' (Systematised Directed Induction) and so on. The latter techniques are still in their development stage and are therefore not considered further. Apart from brain storming, which is a more developed and commonly used technique, a few others which seem to be fairly well developed and follow the behavioural sciences approach are explained briefly in this paper to get an idea of the variety of techniques to-day practiced.

In a brain storming session groups of six to tweleve people are made around a table. They are supposed to produce ideas spontaneously, de- to sit signed to solve a specific problem. In a brain storming session four basic rules must be followed:—

(a) Judicial evaluation is not to be undertaken.

(b) 'Free Wheeling' is welcomed (the wilder the idea, the better, as it is easier to tone down than to think up).

(c) Quantity should be encouraged.

(d) Combination and improvement should be sought.

Brain storming relies heavily on the basic theory that harsh and critical judgement prevents most people from expressing unorthodox ideas, many of which may prove to be valuable if allowed to develop. No attempt is made to judge or evaluate the responses during the session. Evaluation takes place only after the brain storming session has ended. This technique arouses enthusiasm, stimulates a competitive idea atmosphere among participants and provides a good opportunity to improve, change or build on to the ideas of others.

FORCED RELATIONSHIP TECHNIQUE

In this technique a forced relationship is brought about between two or more unrelated items of ideas and, therefore, the name 'Forced Relationship'.

In most cases the relatioship is established arbitrarily often by mechanical means. By this method there is a good chance of stimulating of orlginal ideas.

The catalogue technique is probably the simplest and most widely used forced relationship technique. It consists merely of opening a catalogue (for our purposes this can well be any document dealing with professional subjects) or some other printed source of information and selecting at

random an item, subject, picture or even a simple word. Then, a second item, subject, picture or word is selected in the same fashion. These elements are then considered in combination and attempt is made to extract original ideas based upon the relationship. Neither of the items is controlled, therefore, the area in which ideas are needed must be extremely broad. This, perforce limits the use of the catalogue technique.

BARRIERS TO CREATIVITY IN THE SERVICES

The fact that the evnironment in which an individual or groups of individuals function determines their behaviour pattern to a great extent cannot be denied. We must remember that the potential gains of a person by way of creative thinking can be tremendously reduced or totally nullified by an atmosphere that stifles originality.

The Service environment to-day is one of rigidity in thought and action and the dominant characteristic of this environment is the existence of autocratic authority at various levles. Autocracy in this context can be taken to imply extraction of implicit obedience by the leader from his subordinates. The maximum "Yours is not to question why but to do or die" is the one which is glorified most in the Services. It is this concept which has given rise to the question as to whether creative thinking has any place in the Service environment where implicit obedience to orders is a primer requisite. It is the interpretation of this concept of autocratic authority and the limits of its applicability which will determine the scope of creativity in the Services.

The second barrier, which is universal and not confined to the Services alone, is the existence of personal inhibitions in an individual. The fear complex whether it is fear of failure, fear of ridicule or fear of authority, is the main characteristic of this barrier. Lack of self confidence, inadequate depth of vision of perception, impact of previous experiences and so on also contribute towards development of such inhibitions in individuals. This impedes the mind from indulging in imaginative thinking.

The third barrier which inhibits creative thinking in the Services is the isolation of the Service personnel from the surrounding civilian enviornment. This is a barrier that was created by the imperialist power to gain its own ends of having a powerful Army of the native which will not question but be completely loyal to its masters and which could be depended upon to perpetuate its dominance over the enslaved population. Despite the fact that the situation has altered since over a quarter of a century, we find that the tendency to remain exclusive has persisted in the name of tradition and maintenance of efficiency. This tradition, has created an environment which demands the breaking off of civilian ways of life and habits before indoctrinating an individual in the Service way of life. The emphasis during initial training of all personnel be they recruits—or officer-cadets is on this need to break away. As a result of this, initiative, imagination and to a certain extent, self confidence is systematically destroyed so as to prepare the individual to accept new values. In the process, individual inhibitions as explained

in the second barrier enumerated earlier, are strengthened in thereby leading to loss of creative thinking ability. In fact individuals are encouraged to stick to well worn paths and not to stay away.

FOSTERING A CONDUCIVE ENVIRONMENT

Having identified the barriers, one is apt to jump to the conclusion that the easiest and the best solution is to demolish these barriers completely. However, indiscriminate demolition may well lead to the collapse of the whole Services structure and make its ineffective in achieving its goal. It is, therefore, necessary to guard against such hasty conclusions.

The greatest argument for developing autocratic authority in the Services is for its necessity to ensure that groups of individuals behave and conduct themselves in a predetermined manner in a crisis like war. There is great validity in implicit obedience to orders in this context. However, it is not correct to say that implicit obedience and blind execution are synonymous. Orders are given to achieve a particular goal. They are explicit enough to indicate how the leader wishes to achieve the goal and what he expects the follower to accomplish. But, such explicitness cannot always encompass instructions which cover all exigencies in which the follower finds himself when he proceeds to fulfil the wishes of his superior. In his own sphere of execution, he has to perforce, use his ingenuity and imagination to ensure that he protects himself and his comrades to the best of his abilitiy if he has to achieve the goal. Imagination and initiative are therefore called for from every individual at all levels.

It is felt that the prime requisite to foster creativity in the Services is the need for a change in attitudes of those in authority. They should first be trained to accept this need and then they should encourage what may be termed as restricted creative thinking." This needs an environment for free exchange of ideas at the lower levels. The key to the creation of this type of environment is the absence of criticism and use of authority to snub a person whenever he puts forth an idea that is not in line with the leader's thinking.

With to-day's atmosphere of rigid control, a slight relaxation in the field of training is bound to have a beneficial effect on the thinking of the jawan. The every fact that he has been brought up to obey unquestioningly will ensure that he automatically uses this newly granted freedom in the limited sphere of how to do his task better than to start questioning 'why' he should do this task.

Full creative capability is developed only when he one questions the 'hows', 'what' and 'whys' of a task. But questioning of this nature in the Services can be a great danger. Questioning can be progressively built up as one goes up in the rungs of authority and can be confined to stettings which are far removed from those 'emergencies' where time is at a premium, where risk of obeying is better than the risks of losing an objective and where authority is supreme. In fact, an imaginative mind or a mind trained to

look at the world in a wider perspective would be better able to appreciate the needs for discipline in such emergencies than a fettered mind.

DEVELOPMENT OF CREATIVITY IN THE SERVICES

At this stage we have withdrawn creativity from its protecting shell of mystery and exposed its meaning and how it can be attained in terms which the ordinary (and perhaps hither to uncreative) man can understand. The development has, however, been quite general and the need now arises to be as specific as possible in determining precise methods for generating this quality among the specialised population of the Armed Forces.

For such generation to be effective, it must have:—

(a) A precise objective

(b) A process which makes automatic demands on creativity.

The Service Objective for Creativity

The objective of creativity in the Services has already been informally defined in the paragraphs dealing with the Creative Environment. Using the background it may be formally defined as:—

> "The need for all ranks in the Services to use curiosity, ingenuity, imagination and initiative to the fullest extent of their mental powers in order to carry out the tasks/duties assigned to them in the most productive/effective manner."

A close examination of this formally stated objective reveals the following qualities:—

(a) It does not licence a rejection of explicit orders or disregard for a given task.

(b) By demanding the maximum use of our ingenuity, imagination and initiative, it encourages the self-question "How should I do it?" or "How can I do it better?" among all the sub-ordinates who execute the task.

(c) It presumes that the superior who set the task has used the same ingenuity, imagination and initiative and has thereby satisfied the self-questions, "What should be done?" and "Why?"

(d) It implies that subordinates who sub-allocate portions of their total task are also satisfying all the self-questions of "how", "what" and "why".

(e) It thus ensures that all levels in the chain of command are of to be creative and are limited only by the manoeuvre scpee applicable to their operating levels.

(f) It places no restriction on permissible thought process but nevertheless blocks "wild" solutions by demanding that results be most productive/most effective.

It can thus be said that the characteristics of this formal objective encourage true creativity but inhibit foolishness. Clearly, any crack-pot member of the population who wilfully embarks on a crack-pot scheme remains fully answerable for his actions. Should his scheme fail because of technical unsoundness he cannot claim that the principles of creativity outweighed the principles of science to an extent that he lost all respect for the latter. Further fears can be placed at rest by the comforting thought that such men are unlikely to survive in the uniformed world for long enough to reach a level where they become a truly potential danger.

An explicit objective for the creativity which is to be demanded of the Service population is thus clearly desirable. Equally desirable is its clear understanding by all members of that population. The first major hurdle confronting the official introduction of creativity has hopefully been cleared.

Automatic Demands on Creativity

The next major hurdle is how to build into the environment a condition which automatically demands the exhibition of creativity whenever it is necessary. It will be realised that if no premium is placed on creativity per se, most people will not feel compelled to produce it. There will be no compelling reason to forsake the comfortable life of "working by the book", and creativity will never get off the dusty ground as a living, glowing service characteristic.

The problem is that it is an abstract characteristic seemingly possessed by only a small, specially gifted portion of the population. A little reflection will, however, show that it is no more abstract than many other characteristics which are strongly possessed by servicemen. These are the abstract and apparently immeasurable qualities like integrity, initiative, power of command, sense of responsibility, assertiveness, tact etc. The officer cadre of the services is reported to be specially distinguished in the possession of these qualities as compared with the non-service population. Significantly, however, there is very little formal training aimed solely at developing these qualities. Nevertheless, every serving officer is acutely aware of two things:—

(a) That the service expects him to possess these qualities.

(b) That his performance (in respect of these qualities) is constantly being evaluated.

Accordingly he suffers a compulsion to exhibit these qualities whenever stimulating circumstances arise. He is also always hopeful that the exhibition has been suitably noted by the appropriate observer. The environment is powerfully demanding and it is clearly this powerful factor which influences his behaviour rather than the low level of some-what negative training imparted in these matters.

From this it becomes apparent that the generation of any abstract quality in the total population is proportional to the strength of the demanding environment. Furthermore the environment is seen to be strongly demanding when four characteristics are clearly visible. These are:—

(a) *Selection*—That selection into the population is (to some extent) dependent upon possession of the subject quality (to some extent).

(b) *Training*—That the training process places emphasis on developing the subject quality.

(c) *Evaluation*—That the subject quality is important enough to justify continuous, regular evaluation by superiors.

(d) *Career influence*—That the subject quality after evaluation, exerts influence on career prospects.

It is perhaps true to say that of all these four environmental characteristics, the last two are most powerful for generating and sustaining the growth of any abstract personal quality, i.e. regular evaluation and influence on career. It will have been noticed from the examples given of other, already possessed qualities (integrity, assertiveness etc), that training by itself does not necessarily exert a long lasting generative influence. Nevertheless training is a powerful method for clarifying objectives, triggering curiosity and showing the paths to follow for self-initiated exercises. The selection requirements are also not a very powerful factor in the "growth" environment and merely serve to isolate those who show indications of possessing the desired quality.

In the following paragraphs we will examine these four factors specifically from the point of view of how to use them for generating the abstract quality of creativity among service personnel. In order to be comprehensive, the environment of the officer cadre is being considered. Since the trade structure and trade demands on other ranks vary very markedly, some modification may perhaps be desirable in certain cases. (This desirability would be for simplifying training and tasks but certainly NOT for purposefully blocking creativity).

Selection. Psychologists have already devised many systems of test for evaluating the levels of an individual's creativity. One such system of tests is already being applied in Selection Boards where outdoor group and individual tests are designed to reveal the personal qualities of ingenuity and innovation in addition to others. Since we are primarily concerned with improving the "growth" or in-service enrivonment, little benefit will be obtained by increasing the level of creativity testing at the selection stage It is sufficient for the candidate to know that some premium is being placed on innovative capability to render him fit for selection. Any excessive emphasis, apart from frightening him away, would not serve our real purpose which is not merely to pick out only that very small percentage which is already strongly creative, but to reject only that other small percentage

who are fearful, rigid, unthinking conformers. Essentially, our intention is to capture that large number of alert, intelligent and curious young men who can be taught creativity a good deal more easily than they can be taught to fly. The existing selection process is thus admirably suited to our needs without further modification. In respect of other ranks, selection testing in creativity may be quite unnecessary except in certain technical trades. It would however, be a positive requirement during the process of supervisor selection.

Training. As mentioned before, specific training in creativity is desirable if the population as a whole is to be clearly aware of what it means and how it is to be achieved. It may be of two basic types as described below:—

(a) *Formal Training.* This implies explicit class-room/outdoor teaching regarding principles and processes and would include exercises to illustrate the value of innovative thinking. Specifically, from 10 to 30 periods would be applicable in a year long course, the ground covered being:—

(i) Definitions and illustrative examples.

(ii) The four basic forms of the creative process.

(iii) Barriers and how to overcome them.

(iv) The four techniques for improving creativity with demonstrations/exercises.

(v) A history of successful innovations at all operational levels in the services (i.e. section level to army level operations).

(b) *Informal Training.* This includes the non-positive processes of teaching and refers mainly to the creation of a teaching environment which is compatible with the formally presented principles of the positive teaching. Aspects of such training would be:—

(i) Constructive feed back from trainees on the training process.

(ii) Removal of instructor induced barriers, e.g. "Don't question our methods, just do as you are told".

(iii) Recognition of any incidental but significant innovative practice used by trainees during exercises.

(iv) Organised encouragement of extra-curricular reading in other disciplines to broaden outlook.

(v) Encouragement of "constructive" hobbies as opposed to "collective" hobbies.

Regular Evaluation. We now come to the first truly powerful "growth" factor which influences the entire career continuum. It has already been illustrated that career officers are acutely conscious of the need to display certain qualities which they believe the Service demands of them. This

belief may originate through a training process or through individual deduction but it is sustained over the decades of service by the simple trick of evaluating the man's worth in terms of his quality level. This is perfectly proper and perfectly logical and the trick is not a trick at all in the sense that the man is being duped. How then must we rank creativity in the value level of each up-coming officer. It certainly cannot be suggested that creativity replaces courage, integrity, aggressiveness, etc. However, it must certainly be suggested and accepted that it ranks as, at least, an equally desirable attribute in fixing the ultimate quality of a fighting man. It thus becomes perfectly proper and perfectly logical to force each up-coming officer into an acute awareness of his need to develop and display this highly prized quality. Clearly the tool to use is the ACR which will continually bring him face-to-face with the fact that he must "grow" in this quality as in all others. Observing the principle of "equivalence" with all other critical qualities, it thus becomes necessary to merely add one more assessment scale for creativity in the ACR proforma in among the others. A simple suggested scale is shown below:—

Has a constantly probing mind. Is quick to visualise changes and improvements in big and small matters. Refuses to be beaten by any problem.	Thinks independently. Occasionally finds new and better ways of operation in his sphere of duty. Sometimes gives up tough problems.	Resists change. Works rigidly by books. Does not like new ideas. Incapable of changing inherited systems.
(Above average)	(Average)	(Below average)
(Average +)	(Average 1-)	
Quick to visualise solutions to important problems. Reluctant to give up a problem posed to him but is not sensitive to minor non-obvious problems.	Does not resist change but is slow to see fairly obvious improvements. Usually seeks others' opinions before instituting changes.	

CAREER INFLUENCE

Little needs to be said on the influence that creativity should bring to bear on the career of any serviceman regardless of rank. All other things equal, advancement must clearly be accorded to those whose ingenuity is of a higher order. If all other things are not equal then a necessary balance must be struck. For example it is quite possible for a highly ingenious officer to also be a liar, a cheat, a thief and a coward. His automatic incompetence as a leader may thus wholly cancel the technical excellence that goes hand in hand with ingenuity. His value to his Service will then be judged on whether or not his services as a leader will ever be required

and his disposal decided accordingly. Similar decisions must also be applied to others who stand at intermediate levels of competence in respect of both creativity and other conventional (but essential) qualities of soldierliness. Clearly, however, as an individual moves into the upper ranks his conventional soldierliness will have stabilised at a necessarily high level and his creative abilities will now automatically play an increasingly greater influence on his future. This is the proper time for these abilities to become critical and the ACR process will see to it—to the visible satisfaction of all concerned.

CONCLUSION

To conclude—a creative mind is not the prerogative of a chosen few but the heritage of the majority. It gets stultified by barriers created by the environment in which it is to operate. Removal of these barriers gives scope for the mind to expand and systematic training will help channelise its activity towards useful purpose.

Even in the Services, the scope for creative thinking at all levels is immense. The fear that encouraging imaginative thinking would lead ito questioning of orders is exaggerated and ill founded. In fact the Service atmosphere is best suited to channelise ingenuity towards purposeful ends within the confines of reasons and dictates of discipline. What is needed in the first place is a change in attitudes of the leadership at all levels towards bright sparks. The next step is graded training at lower levels confined to encouraging personnel to think better ways of doing a given task and gradually enlarging scope up the hierarchical ladder to even include finding better alternative tasks. Of course, the approach to training of the fighting soldier and the technician should be different perhaps allowing the latter a larger scope for exercising his imagination. And, lastly, to sustain awareness of the importance of creative thinking it is essential that this ability is assessed, graded and recorded in the ACRs and character rolls of individuals, for the need for improving one's career is the dominant motivating force in most individuals in any organisation including the Services.

Note:- (The sections on "The Creative Process" and "Technique for Improving Creativity" have been taken from THE MANAGMENT OF ORGANIZATION by HC HICKS Chapter 3)

JOHN CRAWFURD

(P. C. Roy Chowdhury)

DR. John Crawfurd of the Military Medical Service in India was one of the pioneers for exploring an independent country. He was deputed to work as an Envoy in Siam. (now Thailand) being deputed by Marquis of Hastings, the Governor General of India in September 1821 for smoothening trade relations. He had to set up a system of commercial relations with a view to put them on a sound basis in the Courts of Siam and Cochin China. The English had obtained a concession over Penang in 1791 from the Sultan of Kedah and wanted to get Siam interested and to ratify their right to Penang and also to get trade with Siam.

Crawfurd appears to have a Bon Homme air in him as Crawfurd Papers, "a collection of Official Records relating to the Mission of Dr. John Crawfurd sent to Siam by the Government of India in the year 1821" published by the National Library, Bangkok shows.

Crawfurd also had his initial difficulties. He was not an Envoy of the King of England or the Emperor of India but more of an Agent of the Agent of the Emperor. The letter he carried was from the Governor General to an Eastern Monarch on his own rights and the Protocol in Eastern kingdoms in those days was much more sensitive, exacting and rather fluid. The very first question to John Crawfurd was if he was carrying a letter from the King—Emperor. Crawfurd had obviously a streak of the British arrogance of those days and argued that the King—Emperor in England lived far away and he was too important a personage and so his accredited Viceroy in India had given the letter of authority to negotiate. That was a lame explanation for the King of Siam who immediately referred Crawfurd to a subordinate official, the Foreign Minister. Apparently enough homework was not done, by the Viceroy and his Council. Crawfurd's mission at Siam started with a limp and that continued and was aggravated by Crawfurd's excursions into sensitive regions beyond a mere trade exploration. But in the later work his masters also had encouraged him at the beginning but did not support him when in trouble.

Crawfurd had another difficulty. He or his associates did not know the language of Siam and had to depend entirely on two Malaya interpreters from Penang—an unsatisfactory arrangement in consideration of the importance of the mission "the Principal object the deputation of a friendly mission to place the intercourse on a defined and permanent footing, so as to expose the British traders to the least vexation and to hold out to the Sovereign of the country the prospect of obtaining such an increase of Revenue as would make it his interest to afford his protection to the foreign merchant. This, it appeared to us, would be best effected by establishing some summary mode of levying the import duty as is practised by the Chinese, by which

the impost becomes comparatively light. While the inquisition of the native officer into the particulars of the cargoes imported and all the chicanery to which it is liable are entirely avoided." But the surveying and astronomical instruments given to Crawfurd and a trained surveyor to assist him does show other objects as well.

The Viceroy in his letter dated Fort William, 23rd November 1821 to the Honourable the Court of Directors also mentioned equipping Crawfurd with "an assistant who is a practised and skillful Surveyor" and in selecting Crawfurd, a medical man who could "perform the duties of a Naturalist." The object was clothed with skilled language "that such a favourable opportunity of prosecuting scientific research in countries so deeply interesting and so imperfectly known, ought not to be lost". There was a tacit assumption that the King of Siam could be hood-winked.

Crawfurd in his letter dated Bangkok, 12th July 1822 to George Swinton, Secretary to the Government also tore the thin curtain by mentioning that the power and strength of the Siamese nation was over-rated for long ignorance. He observed "their own military character is extremely low. The whole population of the country is unarmed, and thus being totally unused to every species of military exercise and cowed by an exquisite system of tyranny, the Siamese are necessarily a cowardly and timid people. It is from a population of this character that their force is levied by an indiscriminate master and the rabble of peasantry so raised, with old or bad arms put into their own hands, constitute their only armies. This barbarous and unorganized force, is utterly incapable of offensive operations against the smallest regular force. The Kingdom at the same time in its most vital part is the most defence–less than can be achieved. Far the most valuable branch of the revenue of the kingdom and the principal perquisites of the officers of the Government arise out of the foreign trade which is conducted in the river Me-nam. A single gun-brig, by blockading the river, would put a total stop to the whole of this trade, and two of them would destroy the capital, without possibility of resistance from this vain but weak people, for the Menam is accessible to vessels of this description at all seasons, the navigation is obstructed by no danger, and whether for domestic treason, or from supineness, there is not a cannon mounted to defend the capital or the approach to it." Surely Crawfurd's mind was not busy with opening up trade relations.

On 29th December 1822 Crawfurd reported to the Secretary to the Government (George Swinton), that the Scientific Department under his had prepared 5 charts upon a large scale of the Eastern Coast and head of the Gulf of Siam, a chart of the river of Siam on a large scale from actual survey, a chart of the Group of islands called Si-Cheng in the Gulf of Siam etc. and added a descriptive memoir. He did mention, however, that at Siam, the express permission of the Government was obtained for using our surveying and astronomical instruments. This the Siam Government had challenged very squarely.

The Siam Government held Crawfurd responsible for these surveys

and thought he had clearly transgressed the limits of an Agent sent obviously to smoothen trade relations. The interpreters had given Crawfurd away eithervoluntarily or through pressure.

In his later despatch from Calcutta, dated 3rd April, 1923 to George Swinton, Secretary to Government Crawfurd tried to explain away the failure of his mission in Siam. He tried to repute the charge he had exceeded his instructions, or that he had not submitted to "the irksome and painful circumstances". He asserted he had seldom gone abroad without a confidential person from the Minister. Obviously he had put too much reliance to his two interpreters who were later subjected to severe interrogation by the Siam Government. They were siezed and "forcibly detained" and not allowed to go to thier home at Pennag.

Crawfurd did fail to obtain any formal treaty for trade and commerce. He could not succeed in inducing the Siam Government to reduce the measurement duty on ships. The Siam Government considered a reduction of the duty very inopportune. The trade relations were, however, directly informed after John Crawfurd had been made the Governor of Singapore. "A lively correspondence took place between him as the Government of Singapore and the Minister of Foreign Affairs in Bangkok". Crawfurd however, gave a firm account of Siam at the end of Reign of Phra Buddha Lotla.

The circumstance were not very opportune for a formal treaty and Crawfurd could not be held entirely responsible although he did, in exubrance of the important assignment to him exceed the limits. His instructions were not clear. A preliminary approach prior to his visit was lacking. Siam Government was not prepared for an authoritative official intercourse with foreign powers. A few years before Crawfurd's visit a Portugese Consulate had been set up in Bangkok. A mission for Dutch East Indies, and merchant ships from United States had gone to Siam. There was also an unsuccessful unofficial mission from the newly established Singapore Settlement through John Morgan, a merchant. Morgan also appears to have made a mess of his assignment as the Crawfurd papers show. Crawfurd only gained one point—the British ships were allowed to come up to Bangkok for selling and buying.

Crawfurd gives a fine account of the trade potentials of Siam—the rice, lac, benzine, ivory, horns, hides, cardamon, pepper, salt, timber, tin, tusks, stones, gambage, etc. and envisaged the market for woollens, cotton goods, raw wrought iron, opium etc. Crawfurd was more successful in his mission at Cochin China. He paved the way to some extent for better commercial relations with Siam for his assignment as Governor of Singapore.

Crawfurd came to Bangkok (then described as Bang-kok) after the capital had been established just over 30 years. He gives a lively description of Bangkok as she was then. The people lived mostly in house-boats or floating-houses made of timber and wood. The trade was confined to what could be done in canoes and on the river. There was a floating bazaar all along the river and the houses were bound to long bamboos driven into the river and were mobile.

The Fort and Palace were on the right bank of the river. The town was entirely built of wood but the Palaces of the king, the temples and the houses of a few chiefs were built of bricks. The Chinese monopolised the shops. Trade was the monopoly of the King and some of the Noble who had ships and junks to trade with foreign countries. Foreign ships could not be used for trade. The King had the special prerogative known as pre-emption, i.e. all goods must be sold first to the King at his fixed price before it could be sold to the public. The import tax was raised according to the measurement of the ships known as measurement duties.

Crawfurd was followed by Captain Burney, Sir James Brooke and then by that great scholar and statesman Sir John Bowring, a personal friend of King Mongkut. They were all sent from England. Sir John Bowring achieved very great results by his deep insight, sagacious handling of the problems and above all because of his personal warm relations with King Mongkut. Sir John was later appointed as Thailand's Ambassador in England. Although Crawfurd a medical man had failed to obtain much of tangible results so as far as the problems of trade and commerce were concerned his mission did some good in paving the way and by highlighting the sensitivity of an Eastern Monarch's sentiments and susceptibilities. The later Envoys profited by his experiences and by his memoirs. Crawfurd's record as the Governor of Singapore was much more creditable.

THE MIRAGE OF POWER

(A Review Article)

PRAMOD KUMAR MISHRA

UNTIL the 2nd World War, Great Britain was one of the Great Power of the World. Any major decisions on any international problems could not be taken without the active participation of the British Government. It is therefore of utmost importance to study the historical legacy of the external behaviour of such a great nation. J. Lowe and M.L. Dockrill* who have undertaken this project of diagonising the foreign-policies of Great Britain from 1902 to 1922 are eminently suited for the job. The former is a Professor of History at the University Alberta and has written two other masterly books before this. The latter who is a lecturer in War Studies at King's College, London has had wide experience in various institutions. The major importance given by the two authors is on the study of a large number of private papers by Premiers, Foreign Ministers, War Ministers, Senior Diplomats, Governors General, memoranda prepared for the cabinet and the Prime Minister's briefings to the King etc. No study before this had gone so deep into the private communications of big personalities.

The authors begin their research with Anglo-French Entente which greatly influenced the subsequent course of events. Grey in his correspondence with Lascelles clearly explaining the purpose of the Entente writes, "Our Alliance and Entente, the terms as well as the facts, are published to the world. This could not be so if they were directed against any other country and as a matter of fact we have no intention or desire, nor have our partners, to use them to the detriment of third parties". (p. 427).

In their discourse on the mutual behaviour of Britain, France and Germany, 1908-12 the authors begin with a quotation from Sir Francis Bertie who said in February 1909, "The French are not always pleasant bed-fellows, but we might go further (viz. to Berlin) and far worse. (p. 29) The authors are of the opinion that inspite of close understanding between Britain and France during the period, the former only gave qualified support to the latter in any case of dispute with Germany. An interesting discovery

*The Mirage of Power; British Foreign Policy 3 Vols by C.J. Lowe and M.L. Dockrill, Routledge and Kegan Paul, 1972, PP 759 Price £ 4.75

on their parts, is difference of opinion between Asquith and Churchill as regards British support to France in case of an attack by Germany (See Churchill's memorandum to Cabinet, on 15th March 1911, p. 454) The authors rightly point out that "England oscillated uneasily in Europe slowly improving her relations with Germany, yet unwilling to draw too closely to her, remaining on close terms with France, and yet not unwilling to commit herself to co-operation with her in the event of war." (p. 58)

As regards Agnlo-Russian relations the authors, after going through the private papers have noticed that it was mainly India's security which forced Britian to seek the arms of Friendship with Russia. Lord Curzon, the then Viceroy of India was mainly instrumental in reversing the "Bristish dilatory and conservative policies". About Britains' role in Central Asia, particularly Persian Gulf, Curzon also clamoured for "a strong declaration by the British Government that England should resist the incursions of foreign powers and for strengthening British relations with local rulers, and even the seizure of a Gulf port if necessary." (p. 61).

About Anglo-American relations between 1895-1914, the authors focus their attention on two points. Firstly "feelings towards America ni Britain was irrational" (p. 96) but it indirectly influenced the shaping of Britsh Policy. The other factor was "strategic planning, closely coupled with the external search for economy ." (p. 97) United States being natural ly gifted with vast natural resources, was in a position to give substantial aid to Britain whenever necessary.

Writing about Britain and Europe between 1912-14, the authors point out that Britain wanted to maintain friendly relations with all the countries in Europe. Churchill time and again emphatically pointed out the vital need for the course of action (see p. 123 and 475). According to him the usual 'Concert of Europe' must not be disturbed.

The second volume of this series being mainly devoted to the Ist World War and its after-math, discusses the strategy and tactic that Britain adopted in any of the major crisis. Taking the issue of the Balkan States during 1914-16, the authors have pointed out the failure of British Diplomacy mainly on two grounds. The first was "Balken politics, the fact that interlocking rivalries in the Balkans were such that the acquisition of one power for the Entente almost inevitably meant the loss of another to the Central Powers" (p 183, see also Drummond's despatch. to Asquith, p. 488). The second was "military weakness, a deficiency greatly magnified by Kitchener's concept of what constituted a fighting force". (p. 184).

In the chapter in Middle East (1914-18) the authors make an interesting observation that the British Government had made commitments which severely restricted its freedom of action in the middle east, largely inorder to induce Hussain to take the field for the Entente (p. 122). Another point which comes to limelight in this part is that British Government by 1917 had publicly declared in favour of making Palestine a natural home for the Jewish

people. No doubt this policy was opposed by no less a personality like Lord Curzon who asked a basic question in the meeting of the war cabinet in the following words, "How was it proposed to get rid of the existing majority of Mussulman inhabitants and to introduce the Jews in their place?" (p. 548) The irony is that even after the creation of the state of Israel as a home for the Jews, for more than twenty five years this problems has yet remained unsolved.

On war aims and peace terms the authors have collected some interesting documents which can throw enough light on the attitude of United States, Germany and others. In a minute of Rice to Grey in October 1916 it has been pointed out that the American constitution and still more the American lack of knowledge of European international affairs makes them act sometimes with frivolity which renders them worse than useless arbitrators in international disputes (p. 558). On the otherhand somebody had pointed outin the war cabinet meeting in 13 August 1918, "The more it was possible to get United States to undertake responsibility in world affairs, the better for the world as a whole and for the British Empire." (p. 620).

The British interest in the Far East as pointed out by them is three fold i.e. "maintenance of integrity of China", maintenance of British Control of India" and "the Japanese alliance." However they don't elucidate much on these.

Towards the Bolshevic Revolution in Russia, Britain although sympathetic, did not take any clear cut position. Enough light has been thrown on the differences of opinion on this issue among the top personalities (see for instance Lloyd George's despatch of Churchill in 1919, (p. 703).

About the peace settlement, 1919-22 the authors are of the view that, the Star attraction from British side was Lloyd George. But British Policy was "at best, lukewarm support for French attempt to impose the full rigour of the treaty, at worst, outright hostility. (p. 353).

In their concluding observation the author have explained the discrepancy between outlay and achievement of British Foreign Policy. According to them it was fundamentally defensive. The objective was not to acquire more territory but to defend the existing holdings (p. 375). It is expected that they should have thrown more light on these aspects.

As a whole it is a well documented series and should be a valuable possession for any research library. But apparently as one notices altthough the authors have chronologically narrated the Biritish policy and atitude during 1902-22, they have failed to go deeper into the major international issue in the first two volumes. Any future edition might possibly take care of that.

EFFECTIVE AIRPOWER FOR DEVELOPING COUNTRIES

by AMARJIT KULLAR

(Published by Macmillan, Delhi, 1975) pp 146, price Rs. 40.00

KULLAR'S book is a welcome sign of increasing intellectual and academic activity at the lower echelons of the defence forces. What is even more welcome is the awareness of the armed forces personnel that the Services must not always be a burden on the national resources but must be so organised as to make a positive contribution to the national growth in times of peace. Kullar attempts to suggest in his book as to how developing countries, whose resources are limited and who have primarily to raise the living standards of their people, can acquire and maintain a viable air power. Proceeding from the premise that air power is the total capacity of a nation to fly and to use the medium of the air to achieve its security objectives, Kullar suggests developing an air power which would entail minimum diversion of national resources. He recommends the development of a small but highly efficient hard core of offensive force which he calls air force—and the parallel set-ups of domestic, international and business air lines, which would all be manned by phased out air power pilots and equipped with civil versions of standard military aircraft. During peace, these airlines would be engaged in their business activities and earn money to augment national resources but in times of war these aircraft would be speedily pressed to boost up the defence effort and help the nation to achieve its security goals. The conversion of the civil airlines to military force in times of war would, according to the author, pose no serious problems since both the aircrew and the aircraft are basically military, doing civil flying during peace.

The author's suggestions appear attractive theoretically but on closer scrutiny reveal numerous weaknesses. War time flying in combat conditions is entirely different from civil flying and to expect the civil aviation set-up with aged pilots to substantially contribute to defence effort in times of war would be a highly hazardous proposition which no nation would like to rely upon. Civil flying effort could, to some extent, be profitably, harnessed in times of war to augment the defence effort, and, in fact, this is being already done by most countries, but to place such great reliance on civil aviation as Kullar suggests would be highly risky and even disastrous, for there is only a limited role which could be assigned to civil aviation. War conditions and combat flying demand highly manoeurable aircraft and the heavy transport aircraft used for civil flying would be found woefully deficient in such conditions.

However, Kullar's views do merit consideration by developing countries not in immediate risk of war. Kullar suggests a good beginning, which could later, with more resources, be built into powerful air force. It is, on the whole an interesting book.

KST

A HISTORY OF AIR POWER

by BASIL COLLIER

(Published by Weidenfeld and Nicolson, London 1974) pp 358, price £5–95

BY its very nature a book of history tends to become a monotonous narration of events but in this case Basil Collier has produced an enormously interesting book. It is difficult to put it aside once you begin reading it. By his lucid narrative style Basil Collier brings to life events long past, aircraft now forgotten and air commanders consigned to the limbo of oblivion. It is not that Collier simply narrates the chronological sequence of events in an interesting manner but he is writing with a purpose—to demonstrate, as objectively as he could, that the history of Air Power is the history of destruction, often senseless and wanton. Collier succeeds in establishing that Air Power could be a useful, and even decisive, factor in war if used sensibly but if its purpose is merely to strike terror, it would largely fail in its purpose as it did during the Battle of Britain and during bombings on Berlin and Dresden.

But Collier devotes the major portion of the book to a description of air activity during the Second World War and while doing so goes into minor, and perhaps avoidable, details of army formations, and this often detracts him from his main preoccupation of describing the air effort. One also feels that Basil Collier could have in his narrative traced the development and growth of tactical and strategic air forces, in a manner which a student of air power could clearly grasp. Basil Collier is generally busy in describing the destruction wrought by strategic bombing and proving how wasteful and unrelated it was to the progress of the war. The author also summarily dismisses the post Second World War developments in a sketchy chapter, Vietnam occupying just a few lines.

However, this book deserves a place of honour in any selection of works of Air Power and those whose job it is to formulate air strategy would do well to learn the lessons. Bassil Collier is driving at-destruction by strategic bombing largely fails to achieve the war objectives.

KST

JAPANESE AIRCRAFT OF THE PACIFIC WAR

by R. J. FRANCILLON

(Published by putnam, London 1970) pp 570, price 105s

AT the time of the Pearl Harbour attack, it was generally believed that the Japanese were mainly producing copies of obsolete foreign—designed aircraft. But within six months of the Pacific War, the Allies were

forced to reappraise the potential of their new enemy and give him the respect which he deserved. Francillon seeks to present in his book the story of this change in the attitude of the Allies. For the first time a book has been produced which present a comprehensive analysis of the Japanese aircraft industry and their products from the late thirties to the end of the Second World War.

In the first five short chapters, the author gives us the history of the Japanese aircraft industry, the history of the Japanese Army Air Force and Japanese Navy Air Force, the designation systems for Japanese military aircraft and the aircraft camouflage and marking system used by both military services. The remaining chapters deal with the manufacturing companies and their products and also list a series of five appendices providing information and data on less important Japanese military aircraft.

The author has evidently carried out some painstaking research and the result is a comprehenseive account of all known types of aircraft of a country which evokes highest respects for its industrial skill and excellence. The book contains some rare photographs of aircraft now long forgotten and the multi-view line drawings, illustrating the book, make it doubly interesting. Francillon has, indeed made an outstanding contribution to aeronautical history by his excellent account of the Japanese aircraft and his effort is worthy of emulation, for he has picked up an area for which Japan is not so well-known.

KST

VICKERS AIRCRAFT SINCE 1908

by C. F. ANDREWS

(Published by putnam, London, 1969) pp 566, price 105s

Soon after the turn of the twentieth century when powered balloons were successfully navigated and when Wright brothers had shown that powered flight of a heavier—than—air machine was a reality, the great armament firm Vickers turned its attention to manufacturing aircraft Since then have passed through its assembly-lines a whole host of famous aircraft—the Gunbus and then the Viney, which failed to see active service but made history by making the first non-stop aeroplane crossing of the North Atlantic and the first flight between England and Australia, followed by even more historic aircraft.

Andrews brings to life those early days when Vickers started the manufacture of their first airships with trepidation and circumspection. He traces the genealogy of Vickers aircraft from the first monoplane through bombers

like Wellington to modern aircraft like Viscount, Valiant, Vanguard and the sophisticated jet airliners the VC-10 with a wealth of information which obviously is the result of years of painstaking research. What particularly enlivens the pages of Andrews' narration is a feast of photographs of men and aircraft long consigned to the limbo of history.

Splendidly illustrated this book is a valuable contribution to the history of aviation and aircraft industry.

KST

INTRODUCTION TO HOVERCRAFT AND HOVERPORTS

by Ian Cross and Cohman O'Flaherty

(Published by Pitman, London, 1975) pp 160 price, £ 5.00

The appearance of hovercraft on the transport scene brought a revolutionary idea reminiscent of the appearance of aricraft in the skies in the 1910's and motor cars at the turn of this century. In England Hovercraft has already become an established mode of transport, though elsewhere it has yet to make an impact. It has immense potentialities of developing into an extremely convenient, economical, manoeuvrable and mobile transport system since hovercraft, unlike other conventional and terrestial vehicles, can move freely over a variety of surfaces, from rock protusions to water, while supported continually on a self-generated cushion of air.

Hovercraft industry is still in its infancy and very little is known about the design and working of these new means of transportation. The authors Ian Cross and Coleman O'Flaherty, both professors of transport engineering, have by bringing out this book filled a gap and provided valuable information not only to those who have a technical interest in the subject but also to those who have a simple curiosity to know about this revolutionary form of movement. The authors discuss the principles of hovercraft operations, its types and uses and also compare it with other forms of transport—in a language which is lucid and easy to understand even to the layman. The authors also discuss the sighting of hoverports and hoverport terminal designs. The book is suitably illustrated and contains explanatory sketches and tables wherever required.

It is by all accounts an excellent work and would be found exceedingly useful by transport engineers, business men and lay commuters.

KST

GUN DIGEST 24TH EDITION, 1970

by JOHN T. AMBER

(Published by The Gun Digest Company, Chicago, 1969) pp 416, Price $ 4-95

The 'Gun Digest', one of the most popular, widely circulated and well-liked firearm book has always been a source of instruction for the hunters, target shooters, collectors, reloaders and law enforcers. There are a few serious articles also meant for researchers and curators in-charge of arms collections in the museums. This 24th edition, being reviewed very late, is in the line of its glorious tradition and has maintained its standard. In the opening chapter "Six Shooters since Sixteen Hundred" the writers M. Lindsay and B. Pendleton have rightly observed that no doubt Colt and Smith and Wesson produced more revolvers than the entire world had made by hand, still the revolving system had come into existence at least 200 years before Colt built his first Paterson in 1836. The authors have described hand cannons, matchlocks, wheellocks, flintlocks and percussion caps, all revolving, to prove its antiquity. It will not be out of place to mention that a few revolving muzzle-loading fire-arms (three to six barrelled) are in the possession of the National Museum, New Delhi datable to the 18th Century. "The Killing Power Controversy" by Jack O'Connor is an interesting hunting experience which reads like a fiction, Similarly, 'Shooting a Buffalo' by John T. Amber, 'Buffalo Hunting Today' by Bert Popowski and 'Reloading for Varmint Hunting' by John Lachuk are hunting anecdotes written in very lucid, carefree and smooth style.

In 'The HK 4 Pistol' ('HK' stands for the German manufacturer Heckler and Koch GmbH and '4' indicates the four calibers for which the pistol is chambered) Larry S. Sterett has given a vivid account of this, one of the latest, pistol. Its mechanism, construction, price, accuracy and functioning have been elaborately elucidated. John Marlin, a tool and die maker, founded 'The Marlin Firearms Company' in 1870 to begin a dynasty of gun-makers that has made the name synonymous with accuracy and dependability. Pete Kuhlhoff, the Gun Editor 'Argosy Magazine' has traced the origin and development of Marlin firearms during the last hundred years. These rifles have for years been celebrated for their strength, easy working and simplicity of action. The solid top receiver and superior mechanism insure absolute safety to the user. So far Marlin have introduced 30 models of rifles and shotguns and all have got a wonderful reception. The two best known rifles are the Model 336 the Centerfire high power and the Model 39, the 22 lever gun. Now the Model 1894 is also available.

"Sporting Arms of the World" by Charles Askins and others presents a brief account of the important models of the world specially of America.

The Remington, Sharps, Winchester, Weatherby Saver, Richland, etc., have been discussed. The author has succeeded in nutshelling his survey.

Modern powder and bullets have given a new life to old cartridges. In 'Loading the old ones—and some not so old' Ken Waters has explained the reloading of four old and two not so old cartridges. This article is helpful only for the owners of the rifles in these calibers. Charles Askins in his article 'Two-fisted Hand-gunning' has demonstrated as how to use the pistol with both the fists simultaneously. Some of his conclusions are not at all convincing. We can all shoot better, hit closer and score higher with one hand. However, it is a good experience to learn shooting with both the fists.

Some of the weapons manufactured by the firm John Dickson and Son, Edinburgh, Scotland have been brought to light by Roger Barlow in 'A visit to Dickson's', the notable amongst them are the three barrelled gun and a few over-under doubles. Similarly Dean Grennell has submitted a detailed report on the 'New Handguns'—U.S. and Foreign' describing Colt Golden Spike and Mark III Trooper, Beretta M-76, Mauser Parabellum, Dan Wesson 357 and Sterling-22. The most authoritative article about the 'Gun Proof in France', composed by Lee Kennett, is a comprehensive and detailed research pinpointing the proof-marks from 1700 A.D. todate. It is the outcome of hardwork and minute observation of the author and is extremely useful in the classification and dating of a French firearm-Derek Partridge has limelighted the Perazzi gun of Italy, hitherto less known and said a good deal in its favour. Some of his statements have been coro-, borated by the Editor of this Digest who has himself used this gun. The famous stockmaker of Germany, Dale Goens, has narrated his personal experience in the field of gun-stocking. Since 1949, when he produced his first stock, he is the most sought after artisan in wood.

The Air Guns are still in demand and those interested in these guns are advised to read the article 'Air Arms 1. Q' by Ladd Fanta which contains much needed information on types, use and care of the air guns. The historical background is given and a few doubts have been categorically answered. Major R.O. Ackerman has discussed the 'Pensylvania Long Rifles'. The various motifs carved on these rifles like fish, eagle, heart, acorn, flower, diamond, serpent, etc., remind us of similar Indian motifs found on several edged and fire arms. These "lucky omens" reveal the religious and mythological beliefs of the users.

The later part of this book is dedicated to the different kinds of cartridges (centerfire, rim fire, weatherby magnum, etc.) and fire-arms available in the market today. The caliber, barrel, length, stock, features, sight and price of each type are clearly indicated. This section is specially valuable

for the sellers and buyers of arms. A catalogue of selected books on arms and warfare, old and new, annotated by Ray Riling is of a great help to the collector of books. Similarly, a list of Arms Associations in America and abroad, glossary for the gunners and the Directory of arm trade are very helpful sections.

The book is profusely illustrated with innumerable and excellent photographs and line drawings. Product evaluations, field tests, technical data, ballistics charts make the book still more valuable. Latest specifications and prices of modern American and foreign rifles, shotguns, handguns and accessories are recorded.

However, the book has its own limitations. It confines its study to the American and European Collections only. Asian, African and Australian fire-arms are completely omitted. Since it is a commercial production much emphasis is laid on the propagation of certain 'makes' and 'types'. Ten out of fifty articles are written by the Editors themselves which gives an impression to the readers that not many scholars are interested in this field but the fact is just the contrary. Many more authors and Museum Curators may be invited to contribute.

In short, this Gun Digest is a valuable asset to any library and a pleasant reading. It is reliable, interesting, instructive and valuable.

GNP

CORRESPONDENCE

Correspondence is invited on subjects which have been dealt with in the Journal or which are of general interest in the Services

To
THE EDITOR
USI JOURNAL
KASHMIR HOUSE, KING GEORGE'S AVENUE,
NEW DELHI-110011

I

MILITARY REVIVAL IN JAPAN AND WEST GERMANY

Sir,

MAHARAJ K Chopra has vividly portrayed the picture of Post-War resurgence of Military Forces in Japan in his article on 'Military Renaissance of Japan", published in Jan-March 1974 issue of your esteemed Journal. This highly informative article goes a long way in removing the wide-spread myth that after World War II till today, the toal demilitarisation of Japan remains in existence. Actually, it is the other way round. Japan's present day military potential, as brought out by the author, may be termed from Global Strategic considerations as purely 'defensive' in nature, but it does constitute a formidable force, East of Suez and specially in the context of the Littoral States in the Indian Ocean area. This aspect assumes importance from the point of view of not only the existing Military Forces in Japan; but the strength of Japanese economy and its industrial potential as well as technological sophistication in this nuclear age. Further, as indicated by the author, the fourth Defence Plan of Japan (for 1972-76) with an outlay of 15000 million dollars is a pointer in this direction. Here, it will be of interest to note that our total sanctioned defence expenditure for the year 1973-74, as per debate on 'defence' in Indian Parliament, has been Rs. 1602.9 Crores.

This article reminds a reader of another article titled "The Bundeswehr Today" by Major Edgar O'Ballance, illustrating the present day military build-up in Federal Republic of Germany and published in Jan-Mar 1970 issue of USI Journal. This paper, too has rightly been able to show the composition, strength and equipment of the Post-war Armed Forces in West Germany, which has remained largely unknown to the outside world. Though the West German Armed Forces remains assigned to the NATO strategic arrangements, they are otherwise too, a major military potential in the European or Global context; since West German economy appears

to be most thriving one in the whole of Europe today. Here, the author rightly points out the strategic importance of West Germany by saying that it is the only NATO member in direct land contact with the Warsaw Pact Powers. Hence, in case of any sudden Russian offensive in Europe, it becomes a battlefield. Today, West German Government and its military Forces must be aware of this harsh reality, since they being a highly industrialised and flourishing economy, have a big stake in the military balance between NATO and Warsaw Pack Powers.

At this juncture, it can be recalled that besides political or ideological reasons, a war can start on economic reasons too. This aspect assumes paramount importance as a challenging issue for those concerned with world peace as well as presiding over the destiny of super Powers today, with the "oil-crisis" having grown to dangerous proportions. We must not forget that besides ideological and diplomatic rigidity the main reason for Japan's attack on PEARL HARBOUR was threat to the availability of raw-materials to the Japanese industry. As per today's international Power Politic as well as various military alliances whatever constraints, may be in existence over West Germany and Japan, those may not be able to prevent them from retaliating, in case of possible economic strangulation.

This aspect calls for special responsibility in the Middle East, specially on the part of oil-rich nations as well as Israel to see reasons and not to drag the issues to "point of no-return"! Here, so far the conflicts in the Middle East has remained localised, whatever the degree of sophistication of military hardwares supplied to the opposing sides by the Super Powers concerned, but the use of "oil" as a political weapon, in a perhaps quite uncompromising manner, has certainly added a new dimension to this volatile Arab-Israeli problem in the Middle East. Hence, all the peace-loving peoples in the world have understandably reasons to be concerned over world-peace.

Therefore, Super Powers must understand that dangerous manipulations in international politics can even boomerang on them and hence, prudence demands that they should refrain from arming Arab nations as well as Israel, "upto the teeth".

College of Military Engineering
PUNE–411031

Major CB VERMA
Engrs

II

PATERNALISTIC SOCIETY

WITH great interest I read your thoughtful study about the paternalistic society in the framework of military life, published in the U.S.I. Journal (Jan-March 1973) which we received a bit late. On the whole I agree

heartily with you and wish that the picture you paint can be realized in your country.

Naturally the Indian way of life, traditions and customs are quite foreign to me as well as the sociological duties of the officer. In spite of that, I believe you do not mind if I introduce a note of warning. You see, paternalistic behaviour in civil and military life was quite customary in Europe, too, until the industrial revolution destroyed it.

The German Army of the Third Reich came close to the paternalistic ideal you are trying to achieve. In particular, the combat units were families where the commander was Pater in the truest sense of the word. The higher echelons furthered this fast developing trend and the undeniable combat achievements of the forces against a vastly superior enemy were to a large degree due to the efficiency their units developed. This efficiency sprang from the "all for one and one for all" philosophy and the attitude of the combat officer to demand nothing of his command that he himself would not do. In fact, he became established leader and officer only because he could do everything better than his subordinates. This made him a true Pater. The worthless officer, and there were many, did not last very long on the battlefield. Soldiers demonstrate a keen instinct as to who is a good and who is a bad leader. The latter will lead them into trouble and find no way out of it. The combat scene offers opportunities to "get rid" of such leaders. It is therefore a selective process which takes place. As final result a battle-hardened, successful unit was usually led by competent officers who did their best to keep their unit organizationally intact, going as far as turning down promotions which might mean a different assignment.

When the war ended in 1945 the "families" were broken up by force, but not for long. To this day a strong bond of faith, devotion and trust binds the survivors to their officers who in some cases still "lead" and help their former men in civilian life.

As you can see a paternalistic leadership can be quite successful if consequently pursued. However, during the rearmament of Germany which began in 1956 it was discovered that the paternalistic approach did not function any longer. This in part was due to the efforts of the Government to create the so-called "citizen in uniform" to prevent the army from becoming a state within a state again. This naturally was incompatible with paternalistic leadership.

But the primary cause was the steadily increasing industrial development of the nation and the subsequent shifting of the sociological order. Whereas the soldier of the Third Reich was the farmer, truckdriver, fisherman or artisan called to arms, the industrial specialized worker stayed on the home front to produce weapons. The soldier of today is the well educated young man with a background in industry, electronics, data processing or the banking business.

The armed forces try to place these men in units or organizations

where their skills can be utilized to the maximum. The electronics specialist will serve in a radar section of a missile battery, the industry trained man as a tank driver, etc.

Now try to imagine the almost impossible task to leading such a group of men. Each soldier will be better acquainted with his work and more knowledgeable in his job than you possibly can be. Your hard won specific skill is leading men in combat to the greatest effect. Your task is obviously not to learn the intricacies of a laser-range finder or how to cure the ills of a missile guidance mechanism. Thus, the very important factor of being able to give advice to your men on the job is lost in a modern mechanized and electronic army. Pater will be laughed at if he tries it.

On the personal level Pater is losing image fast as well. The modern industrial society creates rootless personalities who are accustomed to taking care of themselves and in no way are inclined to cherish comradeship or to have faith in anything but the money they have in their pocket. They cannot be good soldiers with such qualities and they cannot be led in the old-fashioned way as they are not capable of existing comfortably in a tightly-knit group. Now my warning. There is no doubt that India is on the way to becoming a fully industrialized nation. Your soldiers of the future will come from the society described above. You have to plan ahead in time and develop a viable military concept which will be agreeable to officer and men and produce the desired product, namely defense capability with maximum efficiency.

You have the unique chance to observe a sociological upheaval from the distance. So study and prepare for it. You still have time enough, but the day will arrive in your nation too when the modern specialist soldier will not want a *Pater;* instead, he might desire a *Partner* in arms, called officer, who specializes in tactics, psychology and common sense. How this can be achieved—still retaining the necessary measure of command authority and discipline—is an unsolved question. People like you who are actively engaged and concerned about the problems of leadership might develop the proper system.

Editor-in-Chief, STEFAN GEISENHEYNER
Aerospace International
Gross-Talmon Verlag
8 Munchen 81 Cosmaster-4

III
PATERNALISTIC SOCIETY

THE basic problem as Mr. Stefan Geisenheyner has correctly commented upon is that of leadership. We shall dwell on it a little.

Of the three accepted kinds of leadership viz autocratic, democratic and laissez faire, we have to analyse which one is applicable to the army.

We can safely discard the laissez faire type as it is neither required in civil nor in military life though it exists of the kind "don't try to run the organisation; just learn how to run with the organisation." According to popular opinion mistakenly of course, the autocratic type comes closer to the army. We will examine the democaratic type of the "partnership in arms" as suggested by you.

The democratic countries may have professional army of volunteers or of vocational men called to colours for limited periods. I suppose when you speak of partnership in arms, concept, you are particularly referring to the more difficult problems of leadership under the latter type.

The partnership in arms concept comes very close to the democratic type of leadership where a leader is like conductor of an orchestra. His functions are to clearly define the job and coordinate without interfering with subordinates. The application of such a concept must be considered in the light of service conditions.

The above concept has some serious limitations when applied to army. What holds a team together? In the civil life T.S. ELIOT has aptly said, "We live in society to make money from each other." Money is the last thought when bullets are flying. What motivates a group? The motives and needs, under battle conditions, shift to higher strata in the hierarchy of needs. From lower needs of physiological, money and safety, they shift to higher needs, noticeably self esteem. Take the problem of communication. In the industrial life, there is a communication gap between the management and workers, which is filled by the trade union leaders. Such a state is totally unacceptable in the army life. The partnership concept also requires free flow of information and intent. Again this is very difficult in the army due to security requirements. One would expect a soldier to behave in the manner of W.B. Yeats. "An Irish airman foresees his death", though such calmness is seldom possible. Despite these difficulties some of the citizen armies are doing extremely well. Of course, the struggle for survival is a very powerful motive.

The partnership concept is however very valid and important and this brings me to leadership levels. At a junior level possibly upto units, one would need a leadership of the kind "follow me". In higher echelons, the partnership concept is vital.

The leadership levels and its development is a tricky question; I have yet to give a thought to it. However the problem is there. In a formal hierarchy, the promotions follow Peter Principle. If successful unit commanders, as they go up the ladder, persist to carry with them the ideas of rigidity, self-righteousness, follow me and don't ask questions, parochialism, refusal to appreciate other's point of view etc they are bound to bring disaster. History is full of such examples. And if this is what paternalism is going to breed then the democratic cult of incompetence is preferable.

At junior or unit level, the "follow me" concept even in a professional army requires certain pre-requisites. Men must have confidence in the ability of leaders. The bond should be that of love, affection, pride, ownership and belonging. Without this, the follow me is not practicable. Will an officer be able to supervise the job of missile operator or a laser range finder? At higher levels he need not; at lower and immediate levels there is no alternative, he has to.

Sometime back, I read an interesting article in a GDR magazine. The article depicted a picture of GDR in years to come. The picture depicted colour TV in 1980, a smokeless city in 2000 etc. The most important feature was that by 2020, the days of generalists will be over. By that time all organisations will be headed by scientists, engineers, technicians and experts in their fields. Will this solve the problem of missile operator or range finder?

I hope, I am not miscontrued as proponent for return to paternalism. The paternalism is dead in India too. The social orders flow like a stream which cannot be halted; leave aside reversed. I however, do prefer certain aspects of paternalism which foster the group spirit in arms, I am convinced that the cool, individual, material and stand-offish attitude of managers cannot hold a group together under battle conditions.

Army Service Corps School LT. COL. YA MANDE
Bareilly

IV

JUNIOR LEADER : INFANTRY

PERMIT me to express my appreciation of Brig HS Sodhi's article "Junior Leader: Infantry" in your Apr 1973 issue. He has removed a lot of cobweb from the escapist ideas of officers, senior regimental officers in particular, on the nondesirability of retaining JCOs in the infantry. The crux of the matter—sense of responsibility of the JCOs—has been delineated by the author with ample clarity. The fault lies with us, officers, especially unit and formation commanders, for firstly, not utilising the JCOs fully in their responsibilities and, secondly, not paying any attention whatever to their professional, mental and spiritual development. The simple but weightiest truth today is that the whole JCO potential in infantry is not tapped, leave aside exploited. We expect so much from the JCO, including his lightening the officers' headache in all activities in the unit, but seldom train him to do so, much less to accept and fulfil responsibility.

Physical fitness is a bogey. 18 years old on enrolment, he becomes a JCO, in his peak with say 25 years service, which is in his 43rd year. This

is not an age to be termed ancient or physically unfit. By these standards all COs should be sent out. It is only in their last 2–3 years of service that age is discernible in them. But is the man's experience and maturity to be jettisoned for his last 3 years? "Playing safe" is yet another sheer nonsense. Don't the officers, the company and battalion and brigade commanders, have wives and children? Do they too play safe?

I have witnessed an officer suceeding to the "gaddi" of a very late—raising and having the mortification of hearing from colleagues that he was to land in the midst of unless, troublesome, inefficient scum of JCO—NCO material in the new, young battalion, that had been dumped with such stuff from the other, older battalions of the regiment. And it indeed was so. But not for long. An appeal to their sense of duty, reponsibility and honour, laced with prompt attention to improving professional competence started delivering results. Interviews with JCOs where their strong points (for every human being has his strong points like his weaknesses) and weaknesses were indicated and where advice to exploit strength and cover up weakness was offered by a co-professional in a spirit of sincerity, sympathy and constructivity, visibly started producing results. JCOs could be seen flowering. In the 1971 war the unit could move (it moved no less than 15 times in about 10 months) under the Sub Maj and his JCOs, with only the adjutant or the quartermaster over them. Later, in Naga Hills patrols were lead by JCOs and NCOs. The unit suffered not one casualty, not once was it ambushed. JCOs and NCOs had had the taste of responsibility and welcomed it. It is one of the most satisfying service pleasures to see JCOs and NCOs—flowering under attention, training, guidance and faith reposed in them

Today we want ready made, efficient JCOs, standing by to reduce officer's headaches, take on officers' responsibilities and cover up officers'-sins and incompetence. The JCO will do this too, provided they are trained trusted and accordingly employed.

It is indeed surprising that your August journal has premitted itself some amateurism in publishing in your Oct 73 issue what borders on juvenile banter by a JSW officer as a retort to the author of the article. He could have selected less oily ground for his repartee.

Ravi Rikhye's "A New Armoured Force for India" is a waft of fresh air. Though there appears to be substantial jugglery with cost—effectiveness ratio his proposals cannot be merely read as one more article and left languishing in our profressional sub-consciousness as a statistical reference. His meandering imagination kicks up also wafts of dust. His suggestions clearly point to a deep offensive capability in enemy heartland. Will it suit our politico-military strategy? Will it be served by an equally audacious brain, plan and resolution-both national and military? Our long history shows no precedent. Will the nation and military top-knot take such risks? Will such a creation of force not bring down politico-economic

fetters by the international pressure blook? Will our present day prosaic training modes measure up to the dynamic lyrics promised by the potential of such a force? Will the orthodox military heirarchy come out of its old fixation to grasp this new pulsating novelty? Doubtful! Will we outgrow our age-old paranoia of the glory of bashing our heads against wall to break it—Dhrama Yudda? Will we really grasp this new brain-brawn ratio?

Rikhye's new armoured force has to wait for many many years. Novelty, audacity and enterprise in the profession of arms have never-titled our military propensity! Our history has been a dumb witness to this for 3000 years.

Station : C/o 56 APO
Dated : 20 Aug. 74

LT COL SC SARDESHPANDE

SECRETARY'S NOTES

SUBSCRIPTION

Ordinary members of the Institution and subscribers to the USI Journal are reminded that their annual membership fee/subscription falls due for renewal on 1 Jan. 76. They are requested to arrange that the membership fee/subscription is remitted in the first week of Jan 76. The revised rate of annual subscription wef 1 Jan 75 for ordinary members is Rs. 15/- and for subscribers (institutions, units messes etc) is Rs. 40/-.

I hope that those members who remit their subscription as a result of standing instructions to their bankers would have taken suitable action on my note in the Jan-Mar 75 issue of the Journal. Those of you who, for one reason or another, have not taken any action so far, are requested to do so now.

LIBRARY BOOKS

It has been brought to my notice by the Asstt Librarian that many books loaned to the members from the library during the last many years have not so far been returned. Action is in hand to issue individual reminders to members wherever possible. In some cases we may not have the latest addressees of the members. As we are having stock-taking of all the books, members are requested to return all the library books, particularly those issued to them before Sep 75 so that all the books are in their proper places.

CHANGE OF ADDRESS

Several cases of non-receipt of Journals have been reported due to members not informing us of their change of address. Members are requested to inform the Secretary's Office promptly whenever there is a change of address.

CORRIGENDA

In the July-September 1974 issue of the Journal a typographical error occurred regarding the name of the author of the article 'GOOD-BYE' ! THE MULES. For "Major DK BHULLAR" read "Major DK KHULLAR" on Cover page, Contents page and page No. 274.

On page 52 of USI Journal for January—March 1975 issue (No. 438 Vol CV), under the sub-heading "Scale of Weapons and Ammunition"—Delete the first two lines—'A comparative statement..... at Appendix A'.

NEW MEMBERS

From 1 April 1975 to 30 June 1975, the following new members joined the Institution:—

ABROL, Captain D.D.
AJIT SINGH, Major
ALIND DAYAL, Major
AMARJIT SINGH, Major
AMARJIT SINGH, Sqn Ldr
AMRIT, Captain G.S.
ANIL ATHALE, Captain
ARKUNDER, Major N.D.
ARORA, Captain U.C.
ARUMUGAM, Major M.
ASHOK KUMAR SINGH, Captain
ASHOK SUNDRAM, Flg Offr
AUJLAY, Major B.J.S.
AWATAR SINGH, Captain
BAHADUR SINGH, Major
BAINS, Major S.S.
BAJAJ, Sqn Ldr P.N.
BAJPAI, Major A.
BAJWA, Major D.S.
BAJWA, Major T.S.
BAKSHI, Captain D.K.
BAKSHI, Major S.M.
BALAMOHAN, Flt Lt A.
BALUJA, Captain A.K.
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BATH, Captain J.S.
BEASLEY, Sqn Ldr S.S.
BEDI, Sqn Ldr R.K.
BENDRE, Sqn Ldr S.R.
BEWOOR, Flt Lt A.G.
BHAGAT, Major A.R.S.
BHARGAVA, Sqn Ldr R.
BHARADWAJ, Major K.C.
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BHATT, Flg Offr K.J.
BHATTACHARJEA, Flt Lt R.
BHATTACHARYA, 2/Lt A K.
BHATTACHARYYA, Major N.N.
BHUDHIRAJA, Major S,S.
BHULLAR, Major S.S.
BHULLAR, Captain S.S.
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BISHT, Major D.C.
BISHT, Captain R.B.S.
BISHT, Major R S.
BOSU, Captain P.
CHADHA, Captain V.
CHAKRABORTI, Captain B.
CHATTERJEE, Sqn Ldr D.N.
CHATTERJEE, Flt Lt R.
CHATURVEDI, Flt Lt D.R.
CHATURVEDI, Flt Lt B.B.
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CHAUHAN, Sqn Ldr K.K.
CHAUHAN, Flt Lt B.K.S.
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CHIB, Captain B.S.
CHOPRA, Flt Lt S.L.
CHOUDHRY, Major N P.
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HUDALERGaptain I.S.
IYEN, Captain R.G.
JAII Flt L,t N.C.
JAIRAMAN, Captain S.
JAIRATH, Captain S.K.
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JATINDER SINGH, Captain (LIFE)
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JETLI, Major N.D.
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JOGINDER SINGH, Major
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JOSHI, Captain M.N.
KADIAN, Captain H.S.
KAINTH, Flt Lt P.S.
KALRA, Flt Lt J.S.
KANWAL, Captain K.R.
KAPOOR, Captain AVNASH
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KAPUR, Major S.
KARTAR SINGH, Flt Lt
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MALHOTRA Major V.
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PURI, Captain S.S.
PURUSHE, Captain D.K.
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RAI, Captain R.S.
RAI, Captain S.S.
RAJ, Captain K.S.
RAJAGOPAL, Captain P.
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SETHI Captain S.N.
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SHARMA, Sqn Ldr K.M.
SHARMA Captain P.C.
SHARMA, Captain P.C.
SHARMA, Major R.C.
SHARMA, Captain S.
SHARMA, Major S.P.
SHARMA, Captain V.K.
SHEKHAWAT, Major D.S.
SHUKLA, Sqn Ldr S.P.
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SINGH, Flt Lt A.K.
SINGH, Flt Lt G.G.
SINGH, Major G.N.
SINGH, Major G.P.

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Singh, Major K.P.
Singh, Captain R.B.
Singh, Major R.P.
Singh, Major R.P.
Singh, Captain S.N.
Singh, Major V.K.
Singh, Major V.K.
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Sistla, Major D.M.
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Sood, Major P.C.
Subramanian, Flt Lt V.S.
Sud, Captain B.K.
Sudarsanam, Flt Lt M.
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Surender Mohan bhola, Captain
Suri, Captain K.S.
Suri, Flt Lt P.R.
Suria Pandian, Major
Surinder Kumar, Major
Surinder Singh, Major
Surinderjit Singh, Captain (Life)
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Swamy, Captain T.
Tandon, Major O.P.
Tandon, Captain P.C.
Tewari, Major L.M.
Thakur, Major M.R.
Thakur, Major J.S.
Toneja, Major S.K.
Trikha, Flt Lt A.K.
Trivedi, Captain R.N.
Ujager Singh, Major
Umesh, Rathor, Flt Lt
Uniyal, Major H.
Unnikrishnan, Flt Lt K.N.
Varma, Fg Offr R.S.
Vishishtha, Captain in P.C.
Ved Mitter, Captain
Velankar, Flt Lt P.M.
Verma, Captain D.S.
Verma, Captain J.L.
Vig, Captain V.K.
Vikram Chawan, Major
Virdi, Sqn Ldr K.S.
Zalpuri, Flt Lt K.K.
Zile Singh, Captain

Eight officers mess and institutions were enrolled as subscribing members, during this period.

ADDITIONS TO THE USI LIBRARY

APRIL-JUNE 1975

Author	Title

MILITARY STUDIES

Ambrose, Stephen E. and Barber James A.	The Military and American Society, 1972,
Hogg, Ian V.	A History of Artillery, 1974
Holst, JohanJ.and Schneider William	Why ABM? 1969
Kennedy, Gavin	The Military in the Third World, 1974
Kierman, Frank A.	Chinese Ways in Warfare, 1974
Sarkar, Jagdish Narayan	Some Aspects of Military Thinking and Practice in Mediaeval India, 1974
Quick, John	Dictionary of Weapons and Military Terms, 1973
Saxena, K.M.L.	A History of the Departments of the Indian Army, 1974
Shashi, S.S.	Jawan-Pride of the Nation, 1974
Taylor, John W.R. ed.	Jane's All the World's Aircraft 1974-75
Pivka, Otto Von	The Armies of Europe today, 1974

AIR FORCE

Bishop, William A.	Winged Warfare, 1967
Power Waters, Brian	Safety Last, 1972
Taylor, S.E.T. and Parmar, H.A.	Aviation Law for Pilots, 1974 (2nd ed)

WARS AND CAMPAIGNS

Arnold-Forster, Mark	The World at War, 1973
Heiferman, Ronald	World War II, 1973
Miller, George	The Bruneval Raid: Flashpoint of the Radar War, 1974
Reid, Alan	A Concise Encyclopedia of the Second World War, 1974

Author	Title
Sereny, Gitta	Into That Darkness: from Mercy Killing to Mass Murder, 1974
Strawson, John	The Battle for Berlin, 1974
	SECRET SERVICE
Agee, Philip	Inside the Company: CIA Diary, 1975
Brissand, Andre	The Nazi Secret Service, 1972
Deacon, Richard	A History of the Chinese Secret Service, 1974
Deighton, Len	Spy Story, 1974
Hingley, Ronald	The Russian Secret Police, 1970
Le Carre, John	Tinker Tailer Soldier Spy, 1974
Moravec, Frantisek	Master of Spies, 1975
Murphy, Brian	The Business of Spying, 1973
Pickalkiewicz, Janusz	Secret Agents, Spies & Saboteurs, 1969
Seth, Ronald	Encyclopedia of Espionage, 1972
	BIOGRAPHIES AND MEMOIRS
Deshmukh, C.D.	Course of my Life, 1974
Dharma Vira	Memories of a Civil Servant, 1975
Douglas-Home, Charles	Rommel, 1973
Khan, Iqtidar Alam	The Political Biography of a Mughal Noble: Munim Khan Khan-I Khanan, 1497-1575, 1973
India Information and Broadcasting (Min of-	The Years of Endeavour: Selected Speeches of Indira Ghandhi August 1969-August 1972, 1975
India Information and Broadcasting (Min of-	The Collected Works of Mahatma Gandhi Vol. 56, 1973
Khosla, G.D.	Last Days of Netaji, 1974
Nanda, B.R.	Gokhale, Gandhi and the Nehrus: Studies in Indian Nationalism, 1974
	POLITICS AND GOVERNMENT
Deutscher, Isaac	Marxism in Our Time, 1972
Habsbawm, E.J.	Revolutionaries, 1973
Lewis, John Wilson	Peasant Rebellion and Communist Revolution in Asia, 1974
Staar, Richard F.	Yearbook on International Communist Affairs 1970

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USI GOLD MEDAL PRIZE ESSAY COMPETITIONS–1975

(A) For All Officers Irrespective of Rank

Subject

The Services today offer a comprehensive and graduated scheme of training to prepare their officers for their role in the Armed Forces. This takes the form of initial training at the Academy, Professional courses, management and staff training, and finally the National Defence College.

While training provides officers with the requisite knowledge and skills required to perform professional functions, the need for developing the intellect has sometimes been lost sight of. It is today becoming increasingly necessary for officers to possess a finely developed intellect so that as young officers they are able to evaluate new weapon systems and tactics, and as seniors in the higher reaches of the Services to be able to arrive at sound and clear-cut conclusions from the mass of material that they have to go through. They also need to be able to project the Service case with clarity and force of argument in the higher echelons of Government. This they have to do in a complex world of today where there are many issues to be considered in policy making.

Intellect can only be developed by higher education as opposed to training, and such education of necessity must be imparted at a young age. The recent decision to raise the NDA passing out examination to that of a degree level is obviously a step in this direction. Discuss the present entry, training and educational system of the Defence Services and suggest what step, if any, are necessary to produce the type of officers who are not only professionally competent, but who have the necessary intellectual make-up to solve the current problems faced by the Services.

OR

Motivation is necessary for the continued success of any organisation. Over the past few years motivation has been fast declining in the officer Corps of the Services. Today, there is greater need to 'sell the Armed Forces to the Armed Forces' than for publicity at the recruitment stage.

Discuss the causes of this malady and suggest remedies without further burden on the Indian exchequer.

(B) For Captains and Majors with not more than ten years service and their equivalents in Navy and Air Force

The real purpose of discipline is to bind together a number of vastly different individuals into an organisation or a group which works as one team with one aim and one will. In the recent past, environmental changes have affected the attitude of troops towards discipline.

In this context state your concept of discipline as applicable today. Also suggest ways and means to improve its standards.

OR

Adventure Training

About two or three decades earlier, the intake into the Services both for commissioned and non-commissioned ranks had predominantly a rural background and to some extent independent means. A service career had the necessary glamour and was looked upon as both a profession of arms and a call to adventure. Due to changes in the socio-econmic environment in the country an urban background is fast replacing a rural one and a career in the services is now more than ever looked upon as a livelihood. This is not peculiar to our country alone. To offset this, to some extent, and primarily to improve the quality of junior leadership, most foreign countries run a systematic pattern of adventure training for their Armed Forces. We, however, are barely on the fringe of it. Some Institutions have been set up at national level and in the Services it is confined to a few and infrequent mountaineering, trekking or sailing expeditions.

Keeping in view our existing financial constraints, how best could adventure training be organised and conducted on a more systematic basis with a view to achieve better junior leadership potential.

Rules

1. Competition (A) is open to all commissioned officers of the Armed Forces of India, the United Kingdom and other Commonwealth countries, officers of the Territorial Army and the Senior Division of National Cadet Corps and Gazetted Officers of the Civil administration in India.

2. Competition (B) is restricted to Captains and Majors with not more than ten years service and the officers of equivalent rank in Navy and Air Force.

3. Essays may vary in length between 4,000 and 8,000 words. Should any authority be quoted in essay, the title of the works referred to should be given.

4. Essays should be typed on one side of the paper (double spacing) and submitted in triplicate.

5. Entries will be strictly anonymous. Each essay must have a motto at the top instead of the author's name and must be accompanied by a sealed envelope with the motto outside and with the name and address of the competitor inside. These envelopes will be opened by the Chairman of the Executive Committee at the Council meeting, after the judges have given their decision.

6. The judges will have two criteria in mind :—

   (a) The extent to which the contribution throws fresh light on the subject; and

   (b) Whether in whole or in large part it is in a form suitable for publication.

7. Three judges chosen by the Council will adjudicate. They may recommend the Gold Medal to the winner and/or a cash prize, as well as a cash prize to the runner-up (subject to the sanctioned limit of Rs 700/-

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ADDITIONS TO THE USI LIBRARY

Sworkakowski, Witolds	World Communism: A Handbook 1918-1965, 1973
INDIA	
Dasgupta, Biplab	The Naxalite Movement, 1974
Vajpeyi, J.N.	The Extremist Movement in India, 1974
Historical Studies	
Chopra, P.N. and others	A social Cultural and Economic History of India, 1974
Mohan Singh	Soldiers Contribution to Indian Independence, 1974
Medieval India	
Bhatia, Prem	All my yesterdays, 1972
Francklin ,W.	History of the Reign of Shah-Aulum, 1798
Fraser, Andrew H.L.	Among Indian Rajahs and Ryots, 1975
Kennedy, Pringle	A History of the Great Moghuls or a History of the Badshahate of Delhi from 1898A.D. to 1739, 1904
Qanungo, Kalika Ranjan	Studies in Rajput History 1971
Siddiqi, Iqtidar Husain	Some Aspects of Afghan Despotism in India, 1969
Sullivan, Edward	The Conquerors, Warriors and Statemens of India, 1866
Varma, Birendra	English East India Company and the Afghans, 1757-1800, 1968
Yasin, Mohammed	Social history of Islamic India 1605-1748, 1958

(Continued from page 224)

in all, for prizes) and will submit their recommendations to the Council. The name of the successful candidate will be published in October-December 1976 issue of the Journal.

8. The Institution reserves the right not to make an award if none of the essays submitted reaches standard which the judges consider adequate.

9. The award of the judges appointed by the Council of the Institution is final.

10 Copyright of all essays submitted will be reserved by the Council of the United Service Institution of India.

11. All essays should be sent to the Secretary, United Service Institution of India, Kashmir House, King George's Avenue, New Delhi-110011, to be reccived not later than 30*th June* 1976. The envelope should be marked as follows :—

(a) Open to all — "ESSAY COMPETITION (A)

(b) Open to Captain/Major and equivalent rank — "ESSAY COMPETITION (B)

USI Correspondence Courses for Army Officers

PROMOTION EXAMINATION PART 'D' AND DSSC ENTRANCE EXAMINATION—1976

Courses

The next USI Correspondence Courses to prepare Army Officers for Part 'D' Promotion Examination to be held in Feb. 77 and DSSC entrance examination to be held in Nov. 76 will commence as shown below:—

(*a*) DSSC	—1 Mar. 76
(*b*) Part 'D'	—15 Jun. 76

The subjects covered by the courses will be the same as for the respective examination. The Institution has no coaching facilities for the special to corps papers.

Tuition Fee

2. The tuition fee in respect of each course is:—

	For all subjects	*For each subject*
(*a*) DSSC (six subjects)	Rs. 350/-	Rs. 70/-
(*b*) Part 'D' (five subjects)	Rs. 240/-	Rs. 60/-

USI Membership

3. Only members of the Institution can join the courses. Non-member officers can also join by becoming members. They will have to pay Rs. 35/- more: Rs. 20/- as admission fee and Rs. 15/- as membership subscription for the calendar year 1976. The membership subscription is renewable in January each year.

4. Officers who became members of the Institution some time back but have not been regular in paying the annual subscription can also renew their membership by paying the subscription for the intervening years, at the rate of Rs. 10/- per calendar year upto and including 1974. From 1975 the membership subscription has been increased to Rs. 15/- per calendar year.

Applications

5. Officers desirious of joining the courses may apply to the Director of Studies, United Service Institution of India, Kashmir House, NEW DELHI-110011, as soon as possible giving the following details:—

(a) USI membership number, if already a member.
(b) IC Number.
(c) Rank.
(d) Name.
(e) Unit.
(f) Address at which the course material is required to be sent.

6. **Application for admission will be entertained till end of two months from the commencement of each course or till the vacancies are filled whichever is earlier.**

7. All applications must be accompanied by crossed bank drafts/Postal orders for the amount as applicable made in favour of Secretary, United Service Institution of India. Part payments will not be accepted.

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